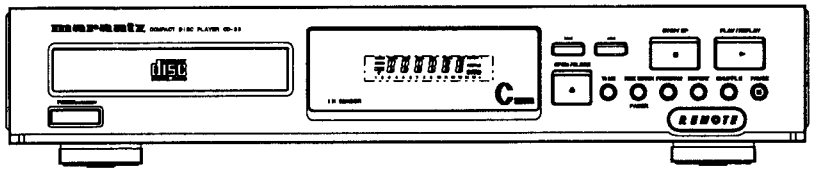
Service Manual

74 CD38/01B/02B/05B

Compact disc player



COMPACT disc DIGITAL AUDIO

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Please use this service manual with referring to the user guide (D.F.U) without fail.

marantz®

PCS 89 146

model CD-38

4822 725 51151
First Issue 1997.9
225V855010 ACT

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Using superior design and selected high grade components, **MARANTZ** company has created the ultimate in stereo sound. Only original **MARANTZ** parts can insure that your **MARANTZ** product will continue to perform to the specifications for which it is famous.

Parts for your **MARANTZ** equipment are generally available to our National Marantz Subsidiary or Agent.

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Parts can be ordered either by mail or by Fax.. In both cases, the correct part number has to be specified.

The following information must be supplied to eliminate delays in processing your order :

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2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature : any order form or Fax. must be signed, otherwise such part order will be considered as null and void.

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SHOCK, FIRE HAZARD SERVICE TEST :

CAUTION : After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard N0. 1492.

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

970408ACT

TECHNICAL SPECIFICATIONS

General

1.Mains voltage	/01B	: 110-127V/220-240V
	/02B	: 220V-230V
	/04B(F B)	: 100V
	/05B	: 230-240V
	/06B(U BL)	: 120V
	/07B	: 230-240V
2.Mains frequency		: 50-60 Hz
3.Mains voltage selection only	/01B	: Voltage selector 2 positions
4.Power consumption mains	standby	: < 3W
	operated	: < 10W

Remote Control

Internal: RC5

Line output

1.Number of channels		: 2
2.Output voltage		: 2 Vrms ± 3 dB
3.Unbalance left-right		: max. 1 dB
4.Output resistance		: 1 kΩ
5.Frequency response from 20 Hz to 20 kHz		: typ. ± 0.3 dB
		: max. ± 0.6 dB
		: with de-emphasis ± 2 dB
6.Phase non-linearity	from 20 Hz to 16 kHz	: max. 7.0°
	from 16 kHz to 20 kHz	: max. 32°
7.Out-band attenuation		: min. 35 dB above 40 kHz
8.Signal to noise ratio	from 20 Hz to 20 kHz	: typ. 95 dB(min. 90 dB)
	with digital silence	: typ. 110 dB (min. 100 dB)
	A-weighted	: typ. 98 dB
9.Dynamic range (-60 dB)	1 kHz	: typ. -94 dB(min. -90 dB)
	from 20 Hz to 20 kHz	: min. -85 dB
10.Total harmonic distortion + noise		
	1 kHz	: typ. -85 dB(min. -78 dB)
	from 20 Hz to 20 kHz	: min. -75 dB
11.Channel separation	1 kHz	: typ. 95 dB(min. 86 dB)
	from 20 Hz to 20 kHz	: min. 82 dB
	with digital silence detection	: typ. 110 dB(min. 100 dB)
12.Automatic switched deemphasis with time constant 15/50 µs		

Variable headphone (CD46 only)

1.Output voltage	: max. 5 Vrms ± 3 dB
2.Unbalance left-right	: max. ± 1.2 dB
3.Output resistance	: 120 Ω
4.Load impedance range	: 32 Ω to 600 Ω load
5.Output power	: 0 to 30 mW into 30 Ω load
	: 0 to 50 mW into 150 Ω load
	: 0 to 30 mW into 600 Ω load
6.Signal to noise ratio	: typ. 80 dB (1 kHz)
7.Dynamic range	: min. 70 dB (20 Hz -20 kHz)
8.Total harmonic distortion	: min. 60 dB (20 Hz - 20 kHz)
9.Channel separation	: min. 70 dB (1 kHz)
	: min. 65 dB (31.5 Hz - 16 kHz)

Dimensions and weight

1.Apparatus tray closed	: WxDxH 435 x 260 x 90 mm
2.Apparatus tray open	: WxDxH 435 x 405 x 90 mm
3.Weight	: 3 kg

Optical read-out system

1.Laser type	: Semiconductor AlGaAs
2.Wavelength	: 780 nm ± 20 nm
3.Light output (c.w.)	: max. 0.5 mW

(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

ESD

(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).
Unsorgfältige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern.
Sorgen sie dafür, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

(I)
Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambiago identici a quelli specificati.

(F)
Les normes de sécurité exigent que l'appareil soit remîs à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

CAUTION INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
VARO! AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASER SÄTTEILYLLE ÄLÄ KATSO SÄTEESEN.
VARNING OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRAKTA EJ STRÅLEN.
ADVERSEL USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UNSAETTELSE FOR STRÅLING.
DANGER INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.
VORSICHT UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.

SHOCK, FIRE HAZARD SERVICE TEST:
CAUTION: After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins(with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.
Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before return to user/customer.
Ref. UL Standard NO.1492.

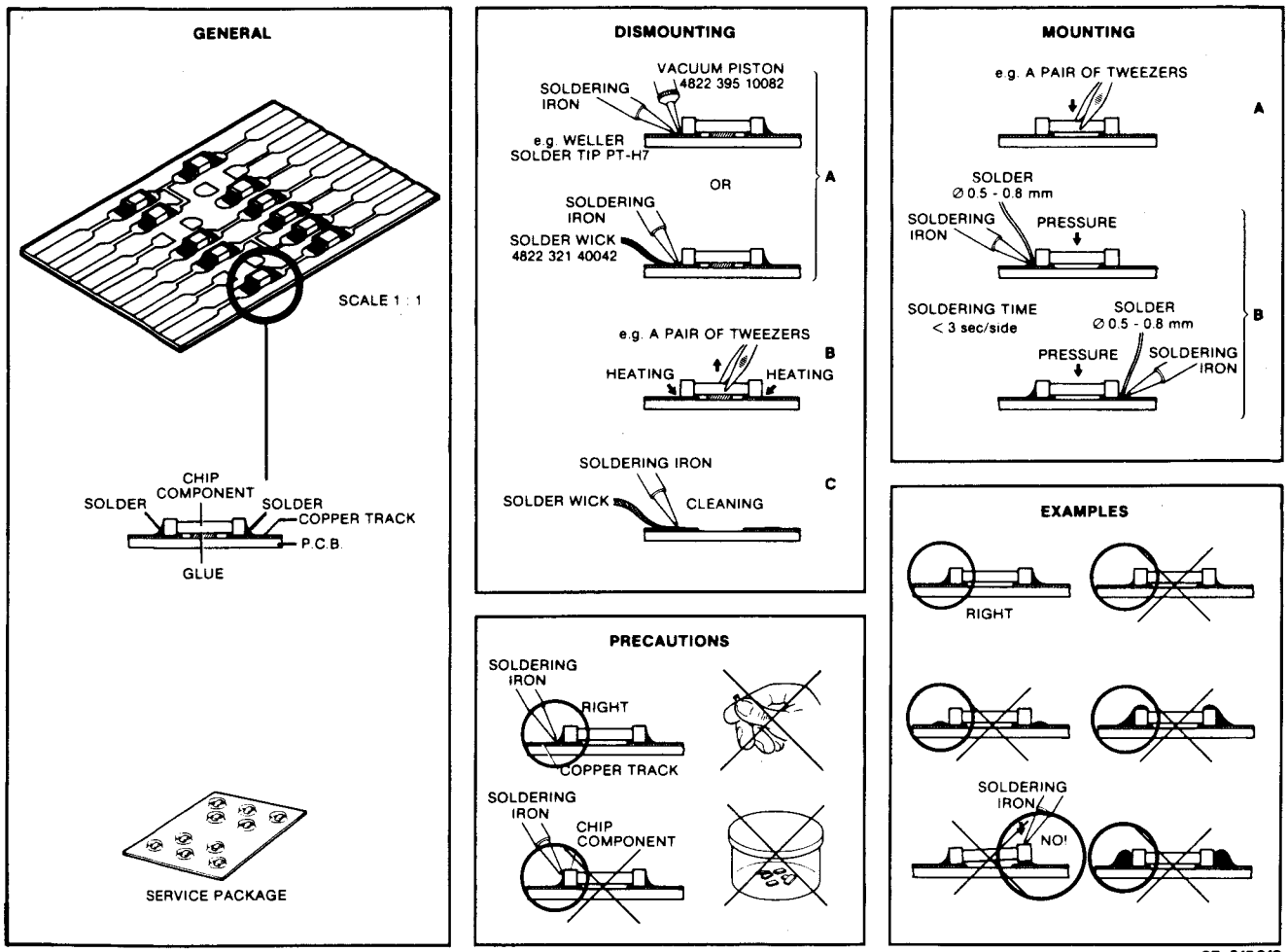
NOTE ON SAFETY:
Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ⚠. Any other component substitution(other than original type), may increase risk or fire or electrical shock hazard.

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne"

CLASS 1 LASER PRODUCT
3122 110 03420

SERVICING HINTS

In the set chip components have been applied. For disassembly and assembly of chip components see the figure below.



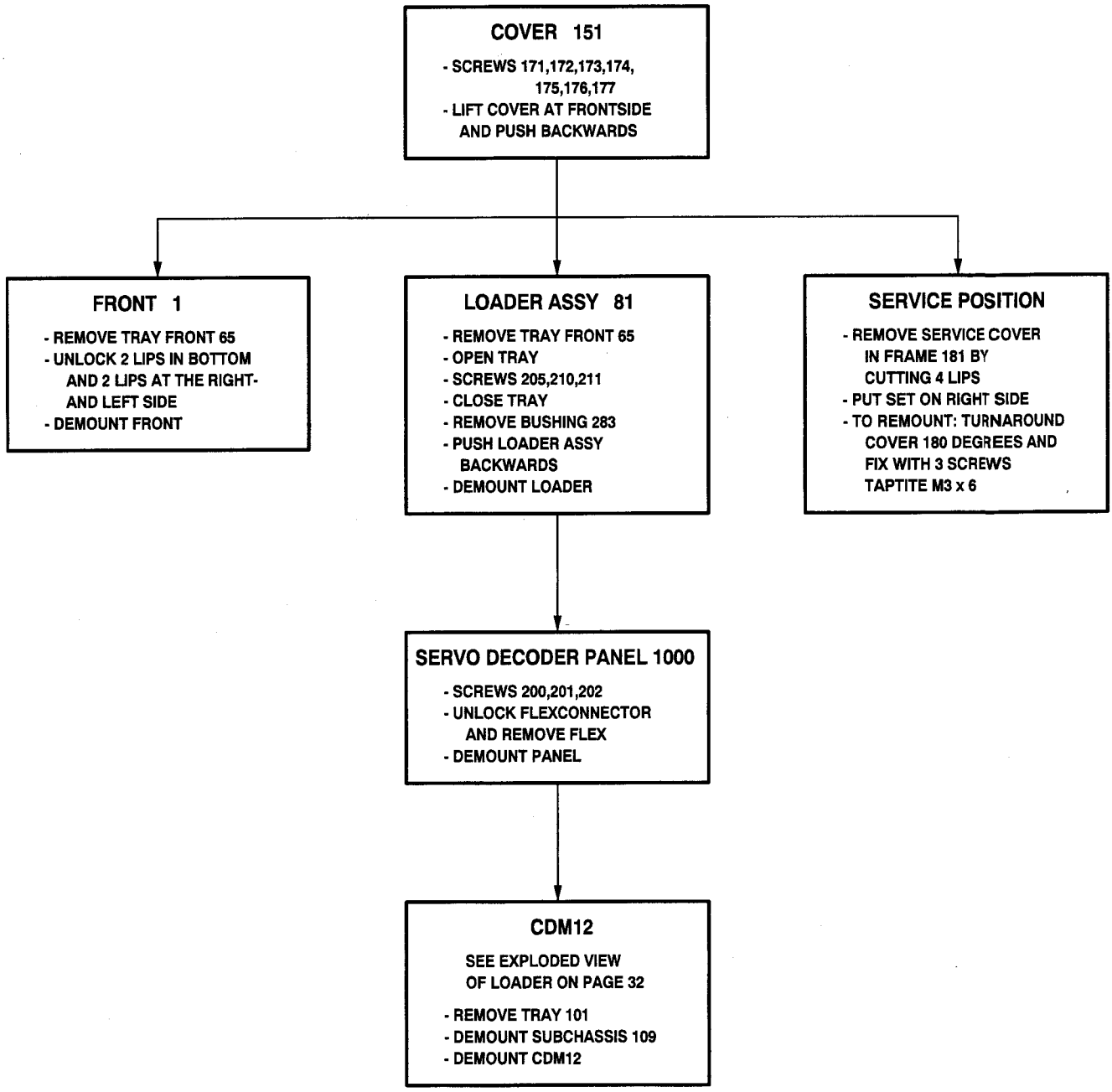
27 012C12

SERVICE TOOLS

Audio signals disc	4822 397 30184
Disc without errors(SBC444) + disc with DO errors,black spots and fingerprints(SBC444A)	4822 397 30245
Disc(65 min 1 kHz) without no pause	4822 397 30155
Max. diameter disc(58.0 mm)	4822 397 60141
Torx screwdrivers	
Set(straight)	4822 395 50145
Set(square)	4822 395 50132
13th order filter	4822 395 30204

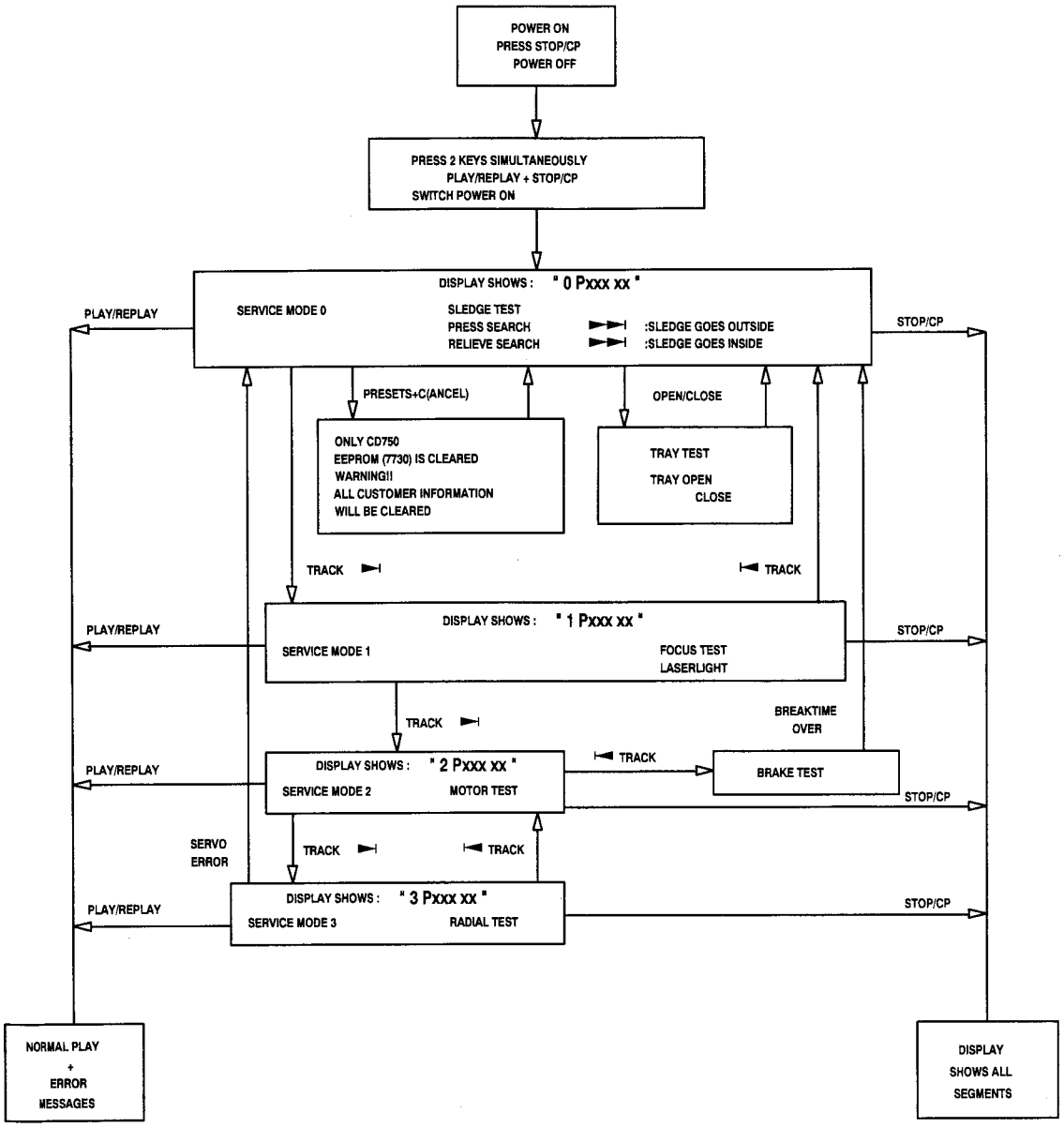
DISMANTLING INSTRUCTIONS

OPEN EXPLODED VIEW ON PAGE 33


COVER 151
- SCREWS 171,172,173,174, 175,176,177
- LIFT COVER AT FRONTSIDE AND PUSH BACKWARDS
FRONT 1
- REMOVE TRAY FRONT 65
- UNLOCK 2 LIPS IN BOTTOM AND 2 LIPS AT THE RIGHT- AND LEFT SIDE
- DEMOUNT FRONT
LOADER ASSY 81
- REMOVE TRAY FRONT 65
- OPEN TRAY
- SCREWS 205,210,211
- CLOSE TRAY
- REMOVE BUSHING 283
- PUSH LOADER ASSY BACKWARDS
- DEMOUNT LOADER
SERVICE POSITION
- REMOVE SERVICE COVER IN FRAME 181 BY CUTTING 4 LIPS
- PUT SET ON RIGHT SIDE
- TO REMOUNT: TURNAROUND COVER 180 DEGREES AND FIX WITH 3 SCREWS TAPTITE M3 x 6
SERVO DECODER PANEL 1000
- SCREWS 200,201,202
- UNLOCK FLEXCONNECTOR AND REMOVE FLEX
- DEMOUNT PANEL
CDM12
SEE EXPLODED VIEW OF LOADER ON PAGE 32
- REMOVE TRAY 101
- DEMOUNT SUBCHASSIS 109
- DEMOUNT CDM12

HAS1124
9345

SERVICE TEST PROGRAM



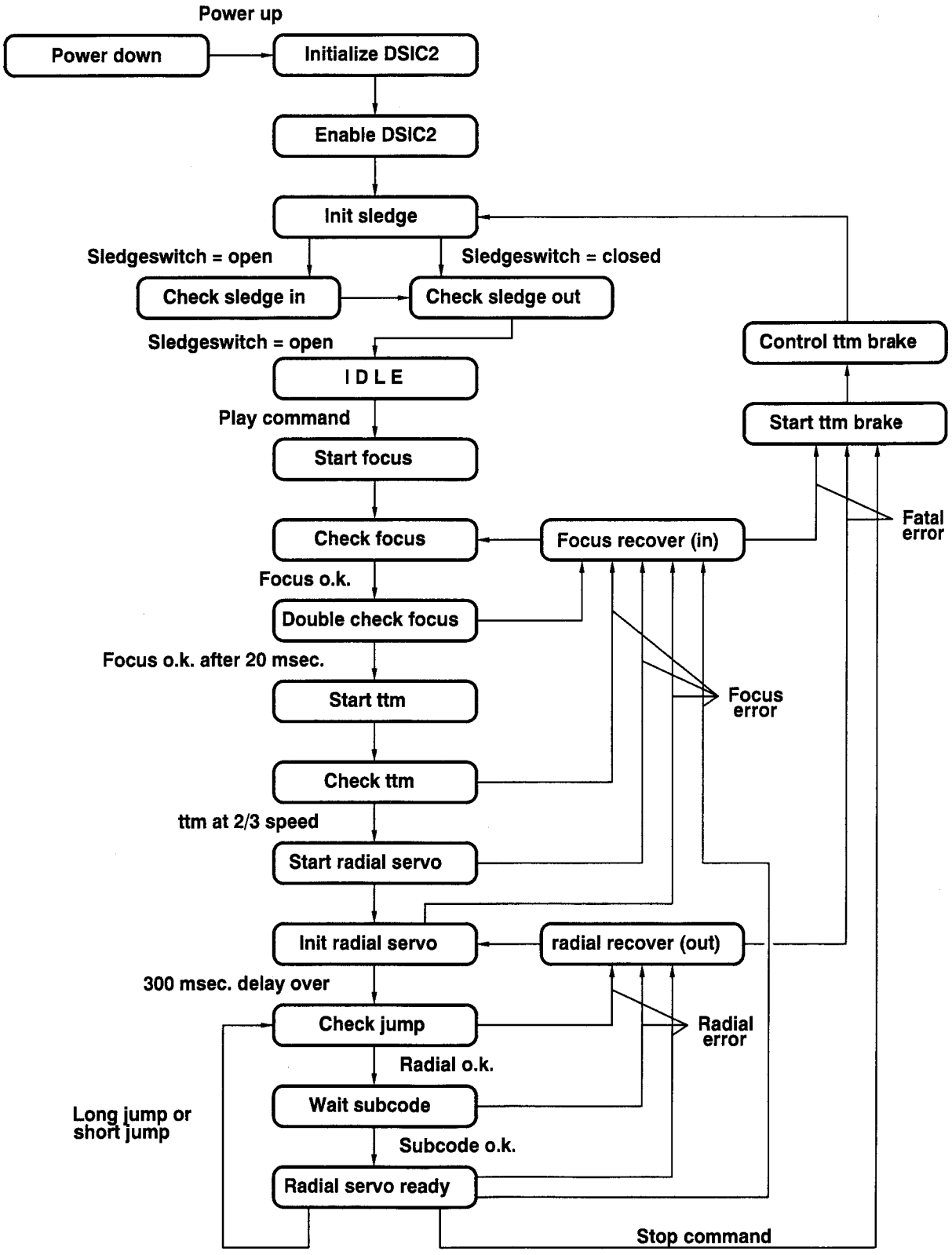
ERROR MESSAGES

-"SLEDGE ERROR"
-"FOCUS ERROR"
-"RADIAL ERROR"
-"MOTOR ERROR"
-"EEP ER"
-"EEP OK"

HAS1126
9342

Pxxx = PROGRAM OF MICROPROCESSOR
xx = VERSION OF PROGRAM

CDM 12.1 start up diagram.



FAULT FINDING GUIDE CDM 12.1

Main Fault Finding Guide CDM 12.1
System

Listen to kind of "scratching sound" while slowly turning the disc by hand.

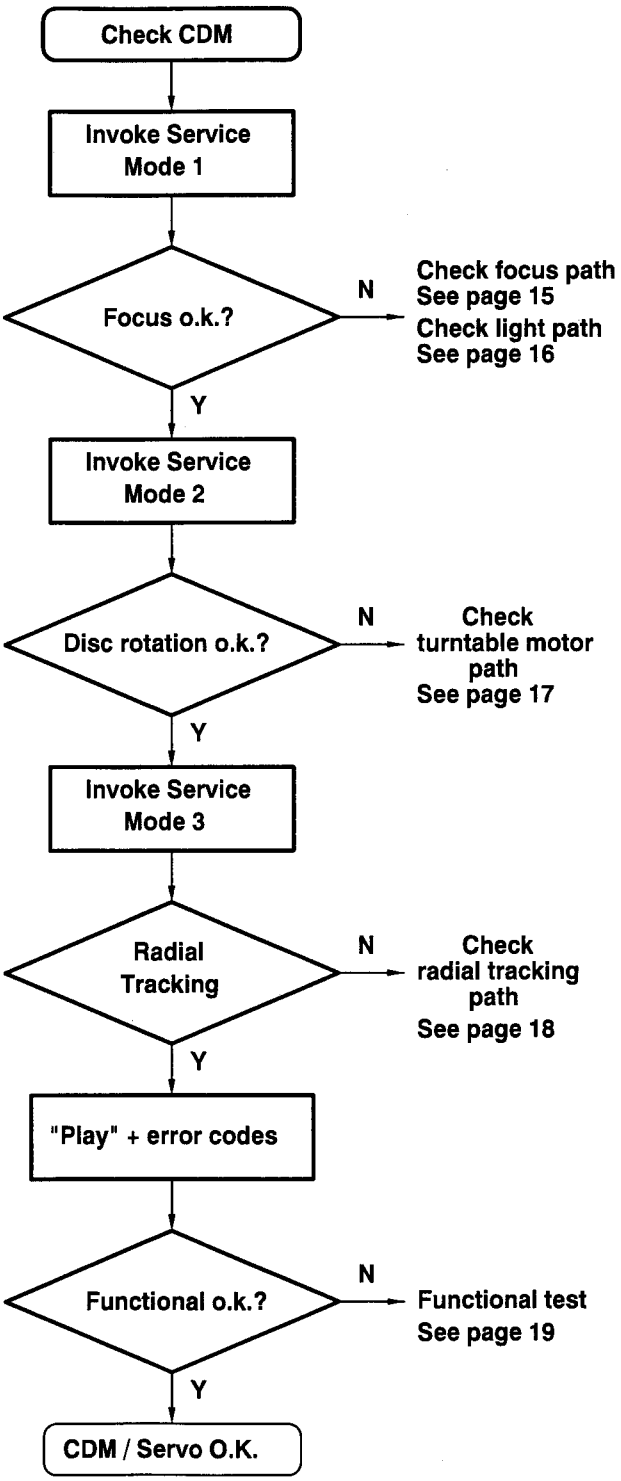
Disc is turning clock wise at normal speed.

Activity on RAD+
(pin 4 connector 1052)

*After "play" starts at track 1 at time 0:00.
*Go to outer track and start again at time 0:00 after max. 6 seconds.

*Try search function.

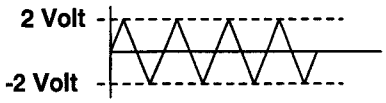
*When going from "Pauze" to "play" music has to restart at the same place.



1)-Turntable and disc free?
Audible and visible control.

2)-Actuator movement?
Visual control.

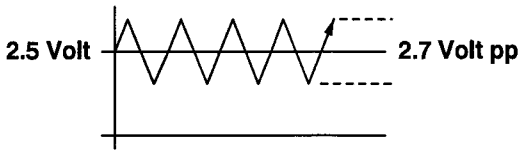
3)-Signals on actuator o.k.?
Triangle wave without disc.
See fig 1.



4)-Connections to actuator o.k.?
Check flex connector pin 2 and 3.

5)-Communication uP <-> IC7000.
SIDA activity (pin 27 of IC7000).

6)-Focus output o.k.?
See fig 2.
Measure with an 10k/3n3 low-pass filter.

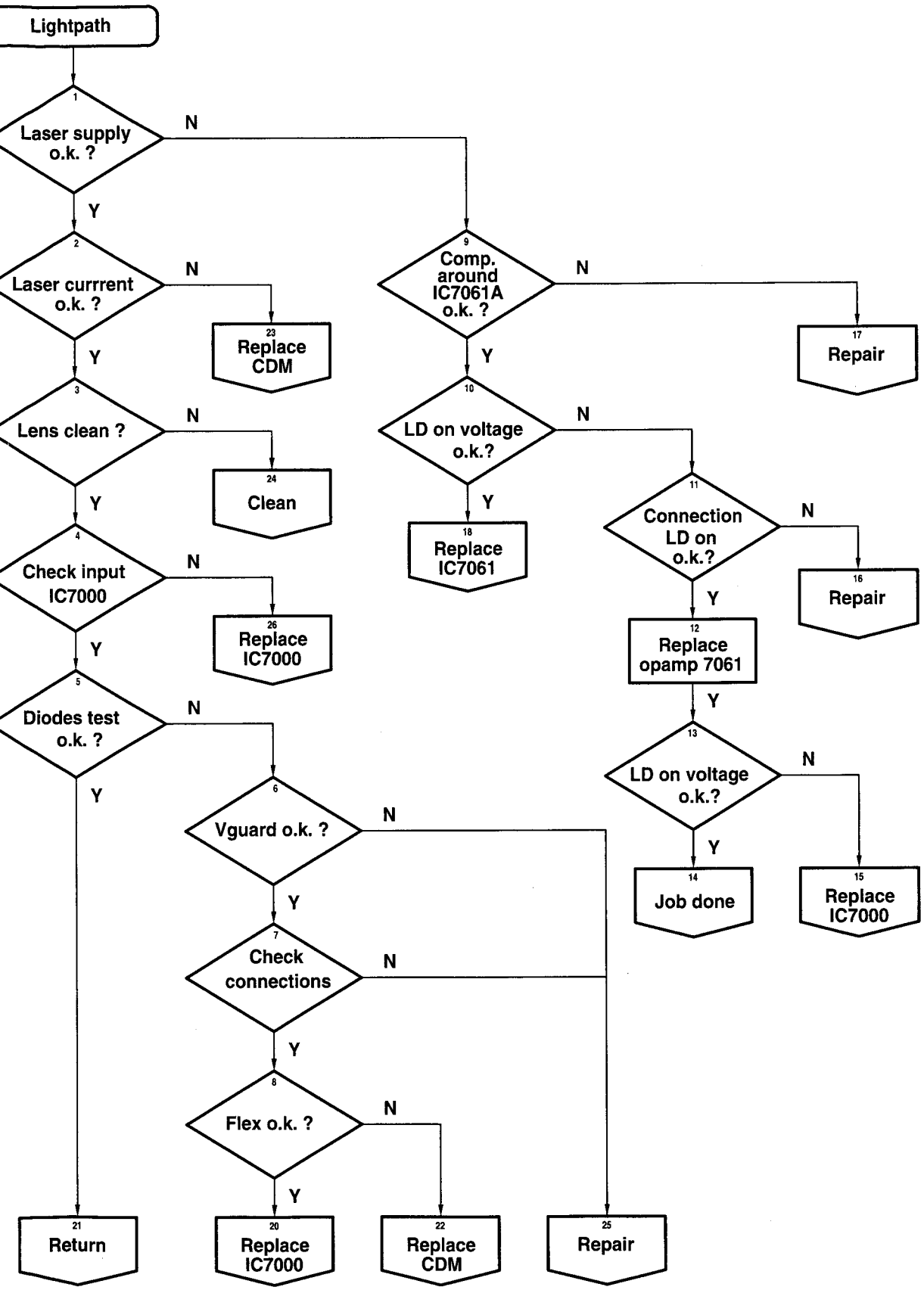


7)-Components o.k.?
Check components R3010,R3011
C2012,C2013
X-tal 1000

8)-Power supply for opamp o.k.?
Check components R3006,R3007
C2008,C2009,C2071,C2074

9)-Check components o.k.?
Check components R3074,R3075,R3076,R3077
R3078,R3079
C2075,C2076

10) & 11)-Pin 17 of IC7000: a frequency of 8.46MHz?


Lightpath
1
Laser supply o.k. ?
N
Y
2
Laser currrent o.k. ?
N
Y
23
Replace CDM
3
Lens clean ?
N
Y
24
Clean
4
Check input IC7000
N
Y
26
Replace IC7000
5
Diodes test o.k. ?
N
Y
21
Return
6
Vguard o.k. ?
N
Y
7
Check connections
N
Y
8
Flex o.k. ?
N
Y
20
Replace IC7000
22
Replace CDM
25
Repair
9
Comp. around IC7061A o.k. ?
N
Y
17
Repair
10
LD on voltage o.k.?
N
Y
18
Replace IC7061
11
Connection LD on o.k.?
N
Y
16
Repair
12
Replace opamp 7061
Y
13
LD on voltage o.k.?
N
Y
14
Job done
15
Replace IC7000

1)-Still in focus (focus o.k.?).
Voltage at pin 9 of connector 1052 > 15mV.

2)-HF-signal present.
VHFI (R3048) > 900mV pp. (testpoint 65).

3)-Check HF-amplifier.

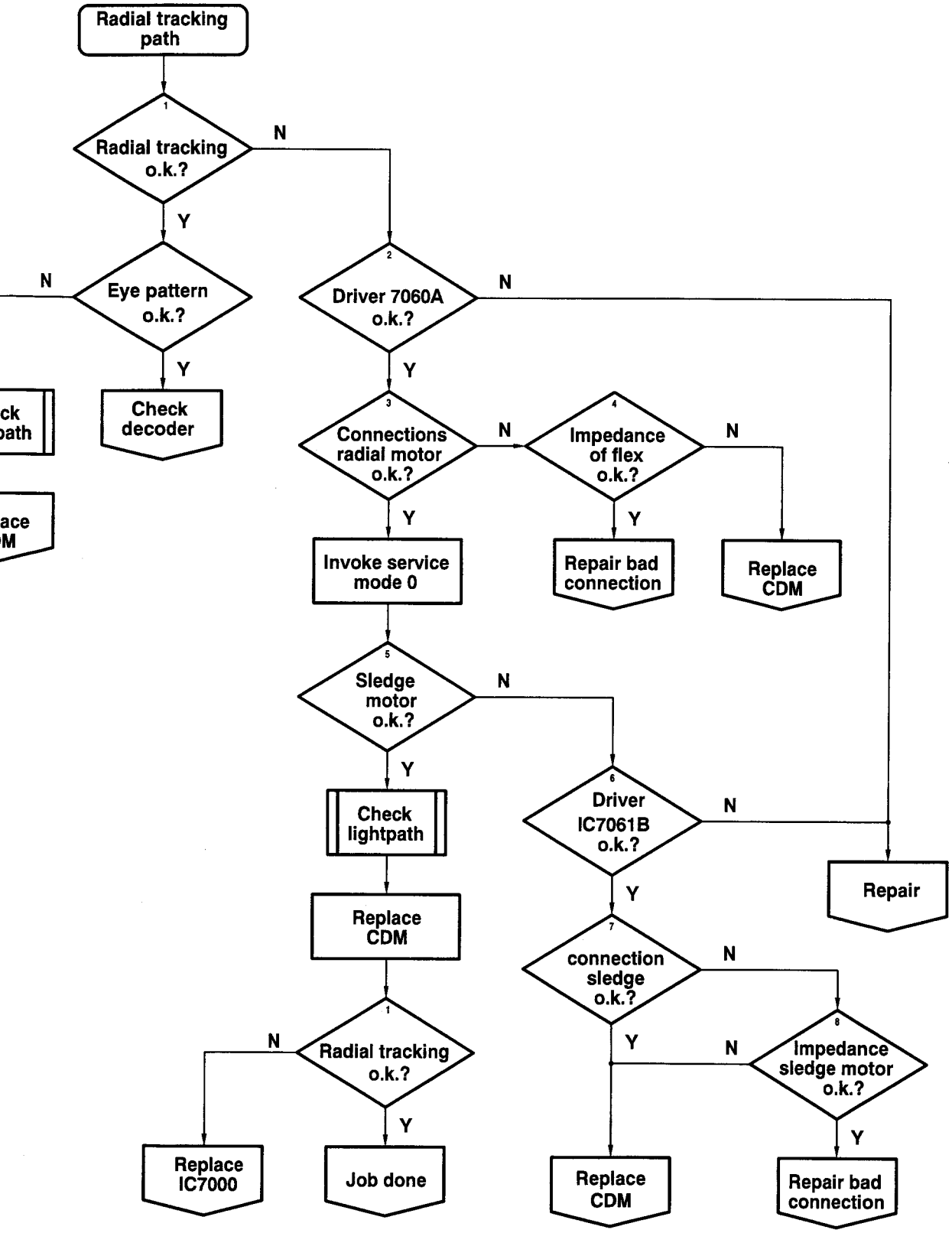
*** Sypply 5V?**

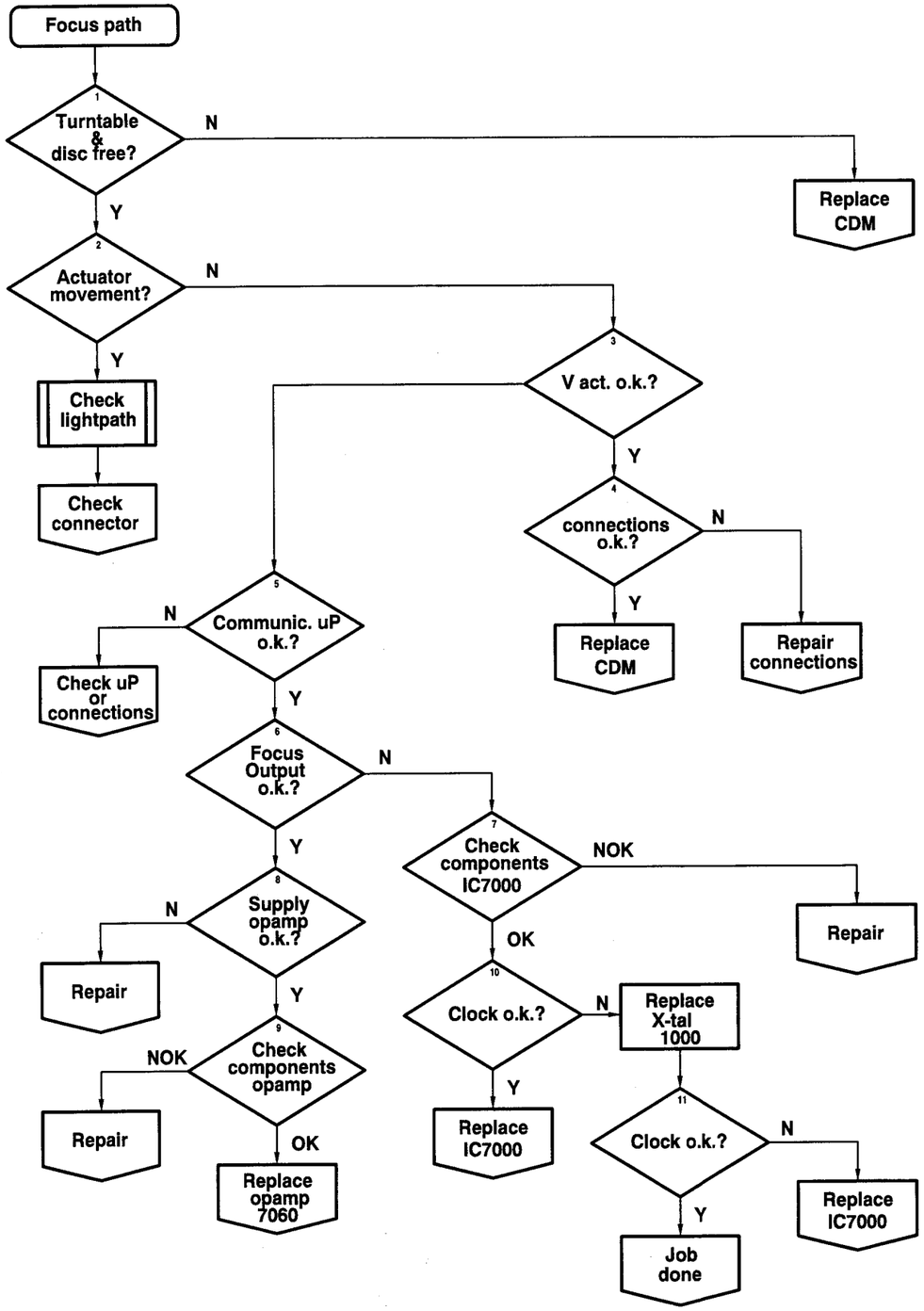
*** Testpoint 17=1.4...1.9V DC?**

*** VHFI DC =2.9...3.6V?**

4)-V motor o.k.?

V motor < 2V: replace CDM.
V motor > 2V: check decoder part.

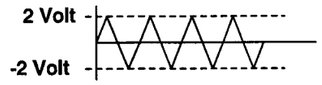

Radial tracking path
1
Radial tracking o.k.?
N
Y
N
Eye pattern o.k.?
Y
Check decoder
2
Driver 7060A o.k.?
N
Y
3
Connections radial motor o.k.?
N
4
Impedance of flex o.k.?
N
Y
Y
Invoke service mode 0
Repair bad connection
Replace CDM
5
Sledge motor o.k.?
N
Y
Check lightpath
Replace CDM
1
Radial tracking o.k.?
N
Y
Replace IC7000
Job done
6
Driver IC7061B o.k.?
N
Y
Repair
7
connection sledge o.k.?
N
Y
8
Impedance sledge motor o.k.?
N
Y
Replace CDM
Repair bad connection



1)-Turntable and disc free?
Audible and visible control.

2)-Actuator movement?
Visual control.

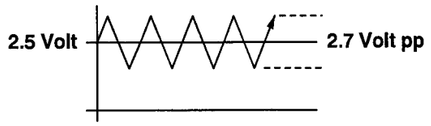
3)-Signals on actuator o.k.?
Triangle wave without disc.
See fig 1.



4)-Connections to actuator o.k.?
Check flex connector pin 2 and 3.

5)-Communication uP <-> IC7000.
SIDA activity (pin 27 of IC7000).

6)-Focus output o.k.?
See fig 2.
Measure with an 10k/3n3 low-pass filter.



7)-Components o.k.?
Check components R3010,R3011
C2012,C2013
X-tal 1000

8)-Power supply for opamp o.k.?
Check components R3006,R3007
C2008,C2009,C2071,C2074

9)-Check components o.k.?
Check components R3074,R3075,R3076,R3077
R3078,R3079
C2075,C2076

10) & 11)-Pin 17 of IC7000: a frequency of 8.46MHz?

WARNING ! ! ! LASER DAMAGE ! ! !

For measurements on the laser (flexconnector pin 1052-6), certain conditions are absolutely necessary for precaution of laser damage.

The instruction and sequence for measuring laser current is as follows:

-turn off mains power.
-wait for > 1 second
-connect a multimeter (high input impedance, not grounded accross resistor 3022. (*)
-turn on mains power and go to play mode.
-reading of measurement value (current = reading/4R7) (**)
-go to stop and turn off mains power.
-disconnect the multimeter.

* In case of a laser voltage measurement, connect the multimeter accross elcap 2025, using the same procedure as mentioned above.

* * If current is > 95 mA, you can be sure that the laser is defect;
If the current is increasing during reading (within +/- 10 seconds), you can be sure that the laser is severely damaged.

* 1)-Laser supply o.k.?
Voltage accross C2025: 4...5V

* * 2)-Laser current o.k.?
Voltage accross R3022: 150...450mV

3)-Lens clean?
Visual control. Check for dust,grease.
Take attention for the blue coating.

4)-Check inputs.
Switch back to service mode 0.
Connect a 2.4 MOhm resistor from
1052 - 9 to 5V: Voltage on pin 5 of IC7000 < 50mV.
1052 - 10 to 5V: Voltage on pin 6 of IC7000 < 50mV.
1052 - 12 to 5V: Voltage on pin 7 of IC7000 < 50mV.
1052 - 11 to 5V: Voltage on pin 10 of IC7000 < 50mV.
1052 - 8 to 5V: Voltage on pin 11 of IC7000 < 50mV.

5)-Diodes o.k.?
Use IR LED of remote control.
A half sine wave must be measured on the diodes (on pin 8,9,10,11,12 of conn. 1052) in the 10mV range.

* 6)-V guard o.k.?
Voltage accross C2025: 4...5V

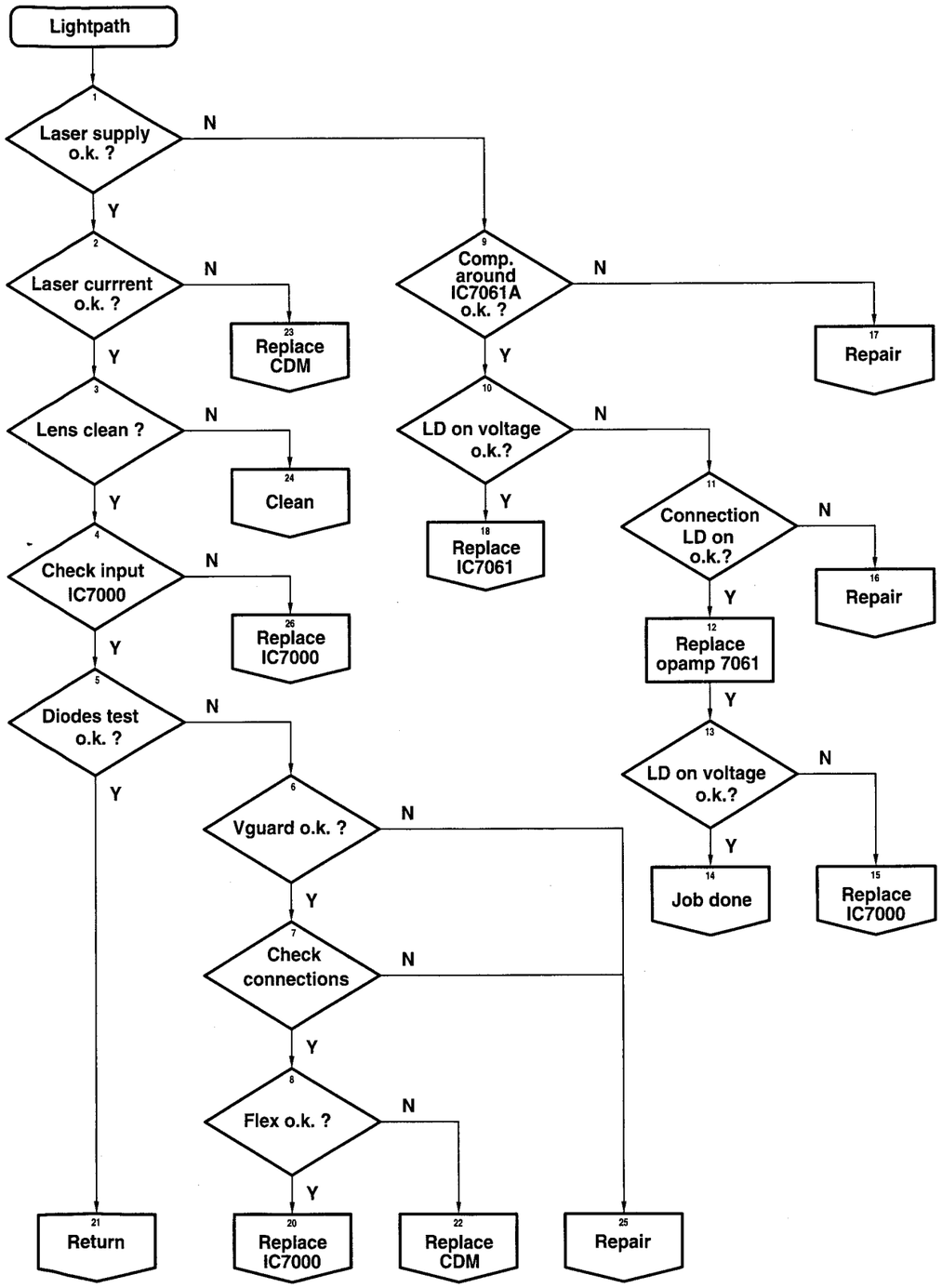
7)-Check connections between main PCB and CDM

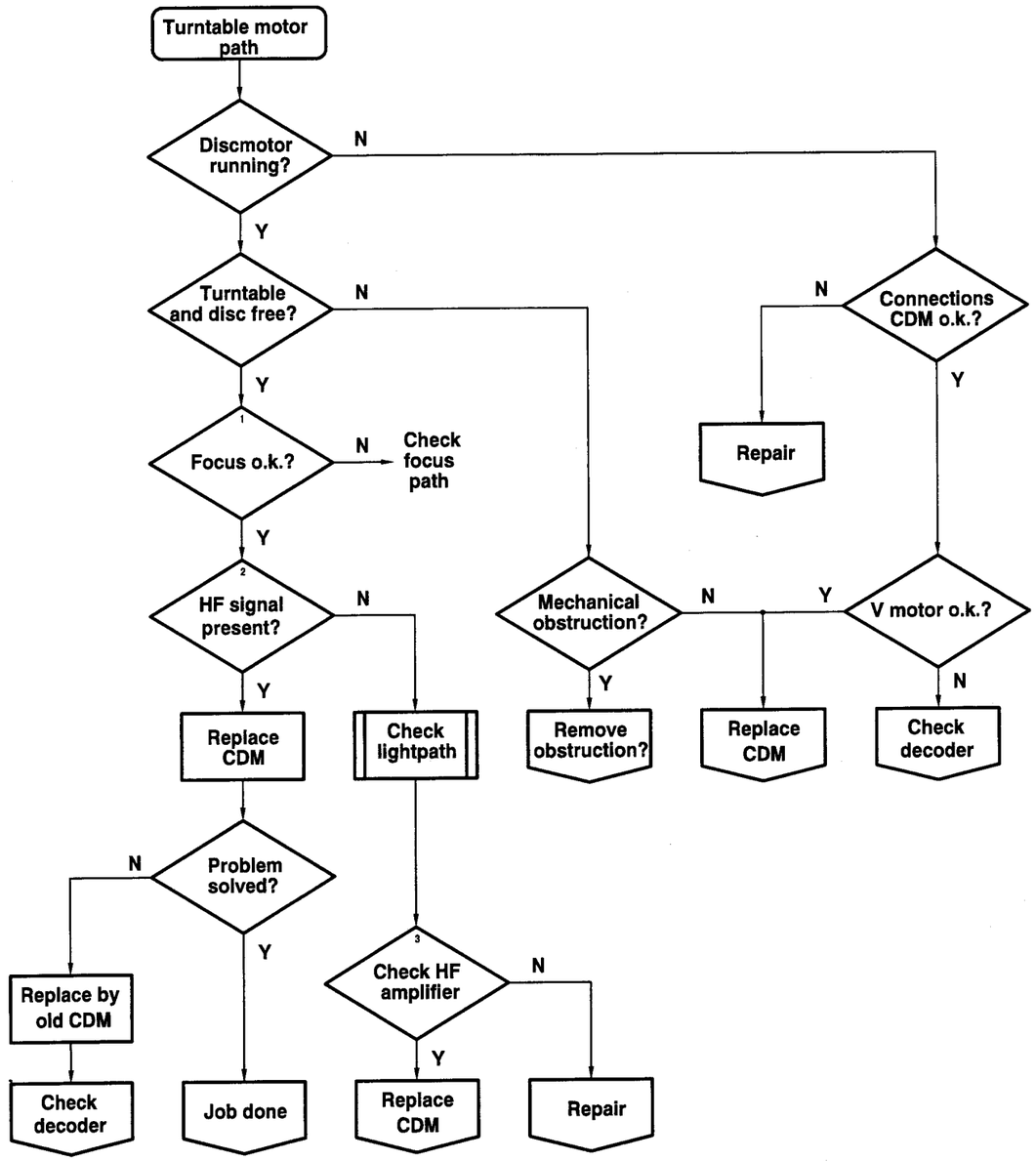
8)-Flex o.k.?
Measure diode functions on CDM-flex

9)-Check components around IC7061
R3022,R3021,R3020
C2025,C2060,C2064

10)-LD ON voltage o.k.?
Measure on pin 2 of IC7000:4...5V.

16





17

1)-Still in focus (focus o.k.?).
Voltage at pin 9 of connector 1052 > 15mV.

2)-HF-signal present.
VHFI (R3048) > 900mV pp. (testpoint 65).

3)-Check HF-amplifier.

* Sypply 5V?

* Testpoint 17=1.4...1.9V DC?

* VHFI DC =2.9...3.6V?

4)-V motor o.k.?

V motor < 2V: replace CDM.
V motor > 2V: check decoder part.

1)-Radial tracking o.k.?
No OTD (testpoint 67) activity.

2)-Check driver 7060A.
Supply: C2071,C2074.
Components: C2067,C2068,C2069,R3068,R3069,R3070,R3071,R3072,R3073.

3)-Check connections radial actuator.
Switch power off.
Measure impedance of 18 Ohm(+/-20%) between pin 1 and pin 4 of connector 1052.

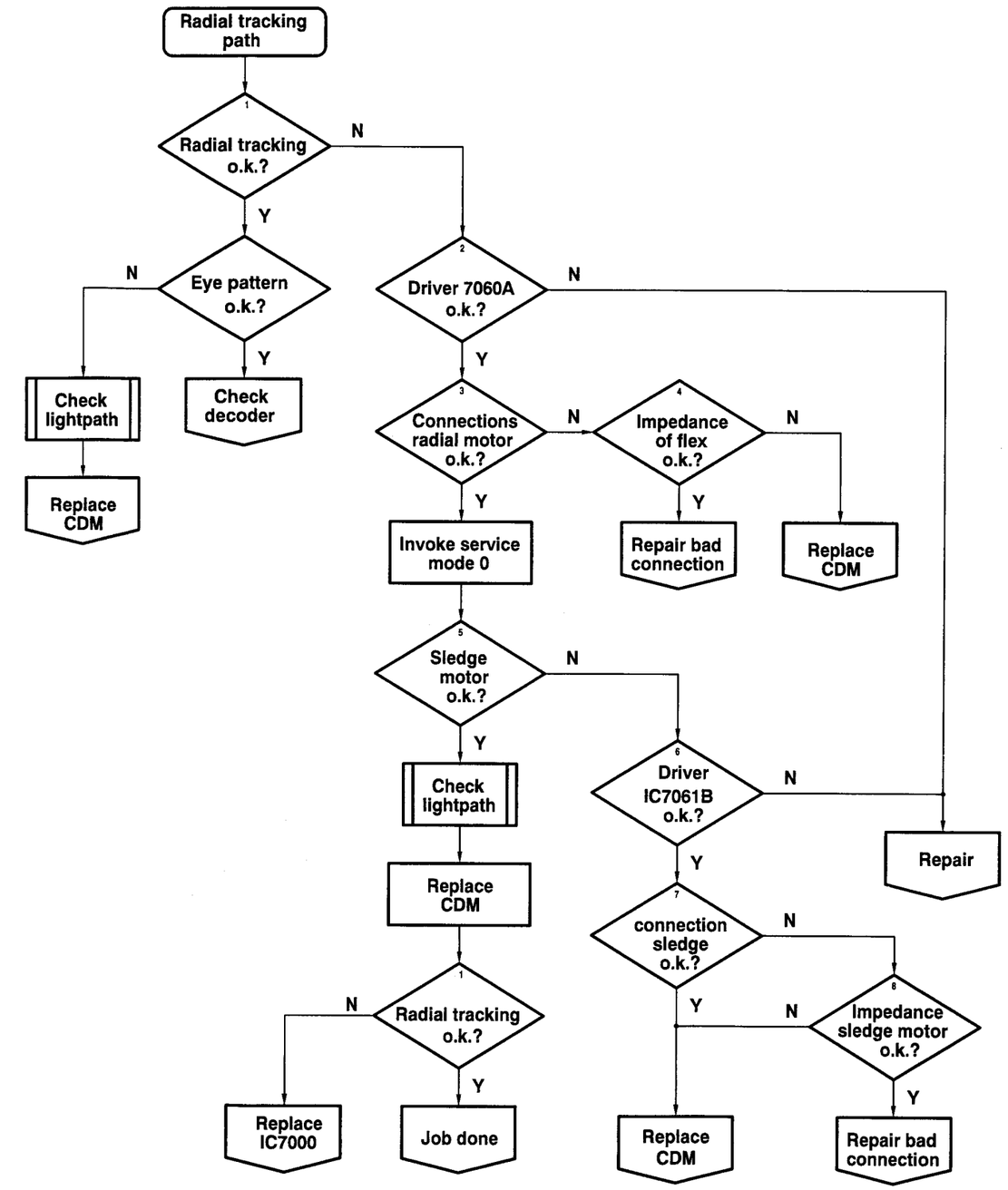
4)-Check impedance on flex.
Power off.
Disconnect CDM-flex.
Measure impedance of 18 Ohm(+/-20%) between pin 1 and pin 4 of connector 1052.

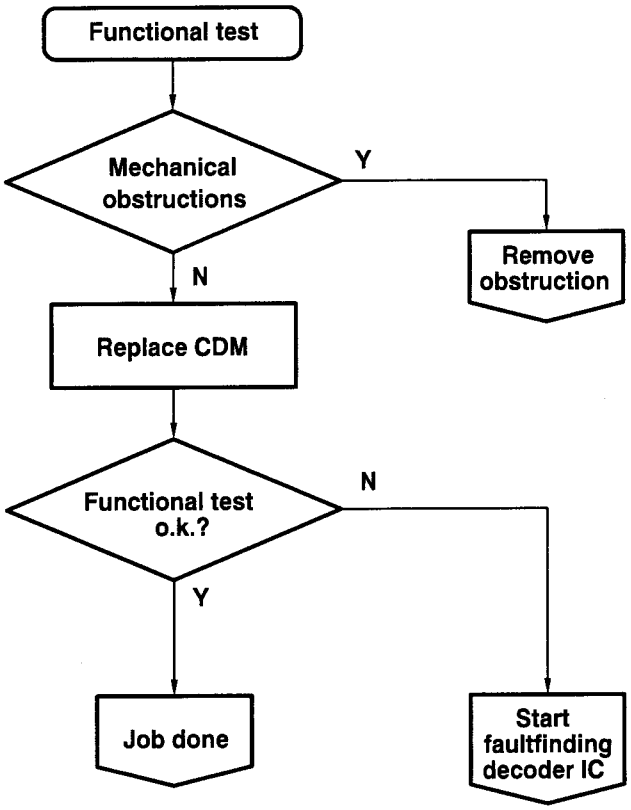
5)-Test sledge.
Power on.
Invoke service mode 0.
Move sledge out (whith search forward key).
Sledge moves to init position after releasing key.
Not o.k. if sledge doesn't move,doesn't reach the outer position or makes a ratling noise at the inner side.

6)-Check driver 7061B.
Supply: C2060,C2064.
Components: C2062,C2063,C2066,R3060,R3062,R3064,R3065,R3066,R3067.

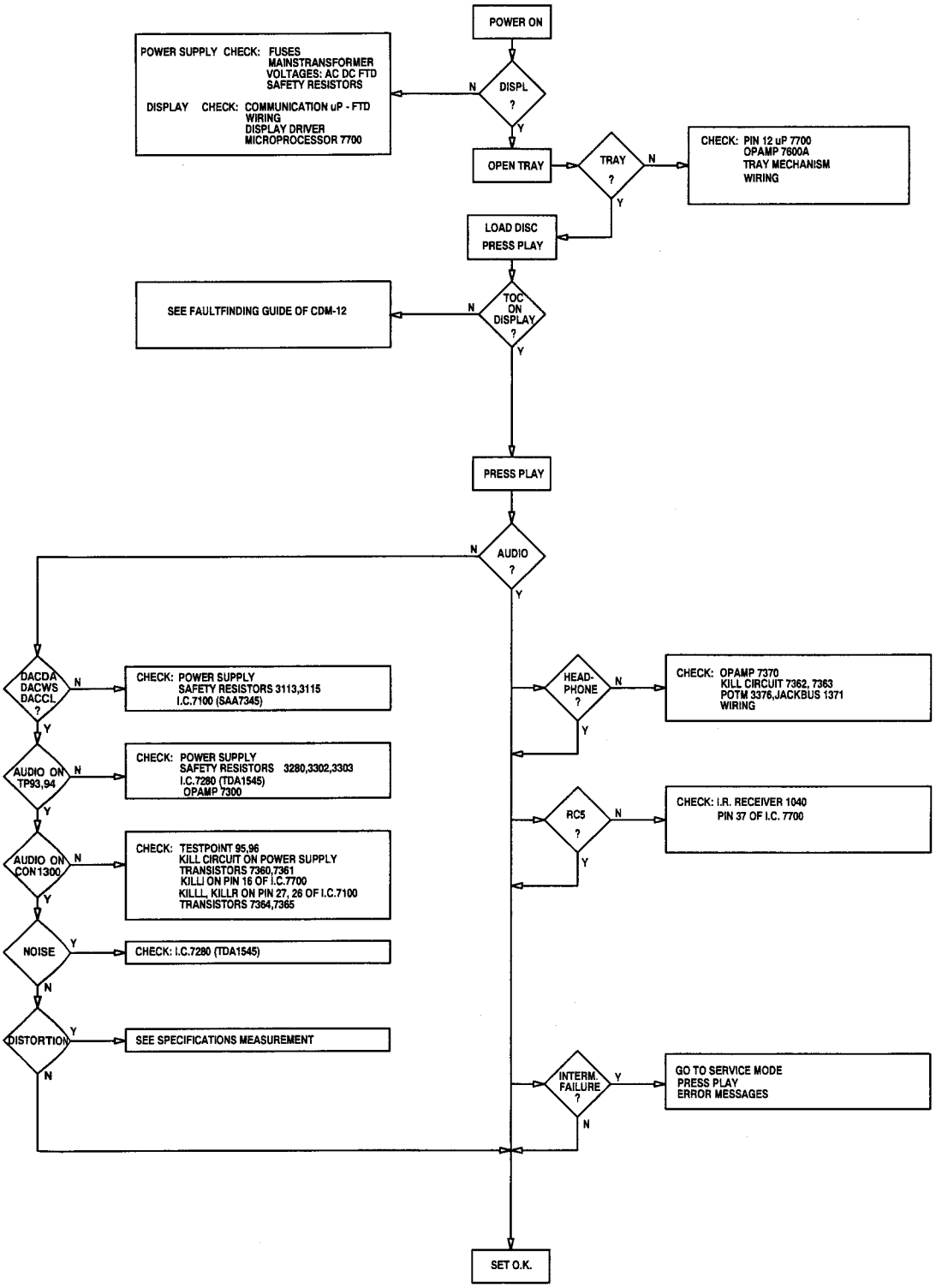
7)-Check connections of sledge drive.
Power off.
Measure impedance of 11 Ohm(+/-20%) between pin 5 and pin 6 of connector 1070.

8)-Check sledge motor.
Remove CDM.
Measure impedance of 11 Ohm(+/-20%) between motor terminals.




Functional test
Mechanical obstructions
Y
Remove obstruction
N
Replace CDM
Functional test o.k.?
N
Y
Job done
Start faultfinding decoder IC

FAULTFINDING GUIDE

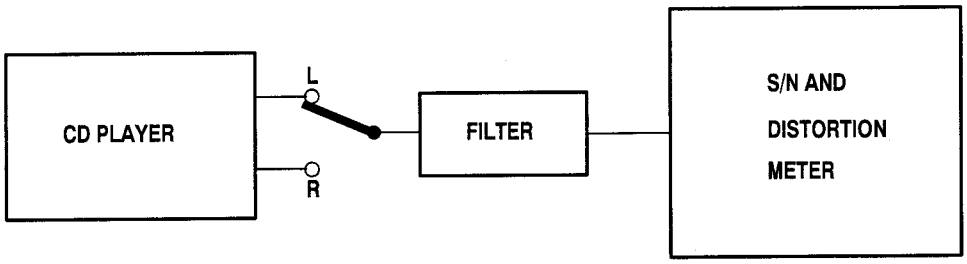


HAS1123
9345

SPECIFICATIONS MEASUREMENT

SIGNAL	AUDIO SIGNALS DISC 1	TESTPOINT	REMARKS
ANALOG OUT LEFT ANALOG OUT RIGHT	TOTAL HARMONIC DISTORTION TRACKS 10 - 23	FILTER OUTPUT	SEE TECHNICAL DATA SEE DRAWING
ANALOG OUT LEFT ANALOG OUT RIGHT	SIGNAL-TO-NOISE RATIO TRACK 1 REFERENCE LEVEL TRACK 49	FILTER OUTPUT	SEE TECHNICAL DATA SEE DRAWING

FILTER = 13TH ORDER FILTER 4822 395 30204



e.g. SOUND TECHNOLOGIE
ST1700B

ABBREVIATIONS

BCK	Bit clock input of CC-DAC TDA1545
CFLG	correction flag output
CL	interface clock input line
CL11	11.2896 MHz clock output
CL16	16.9344 MHz system clock output
CLA	4.2336 MHz microprocessor clock output
CLO	Clock output
CRIN	crystal/resonator input
CROUT	crystal/resonator output
D1-D4	Central diode input of TDA1301
D1-D5	Photodiode signals from CDM12 mechanism
DA	interface data I/O line
DACCL	Bit clock output of CD6 decoder SAA7345
DACDA	Data output of CD6 decoder SAA7345
DACWS	Word select output of CD6 decoder SAA7345
DATA	serial data output/Data input of CC-DAC TDA1545
DOBM	biphase mark output
FO	Focus actuator output
FOC+	+Connection of focus actuator
FOC-	Ground connection of focus actuator
HF	High-Frequency signal to decoder input
HFIN	comparator signal input
HFREF	comparator common-mode input
IOL	Left channel current output
IOR	Right channel current output
IREF	Reference current output
ISLICE	current feedback from data slicer
LDON	Laser drive on
MISC	general purpose DAC output
MOTO1	motor output 1
MOTO2	motor output 2
NRST	Reset input
OTD	Off track detector
PORE	power-on reset enable input(active low)
R1-R2	Satellite diode signal input
RA	Radial actuator output
RAB	interface R/W and acknowledge input
RAD+	+Connection of radial actuator
RAD-	Ground connection of radial actuator
SCLK	serial bit clock output
SICL	Serial interface clock
SIDA	Serial interface data
SILD	Serial interface load
SL OUT	+Connection of sledge motor
SL	Sledge output
TEST1	test input
TEST2	test input
TS1-TS2	Test inputs
V1-5	Versatile input pins
WCLK	Word clock output
WS	Word select input of CC-DAC TDA1545
XTLI	Oscillator input
XTLO	Oscillator output
XTLR	Oscillator reference

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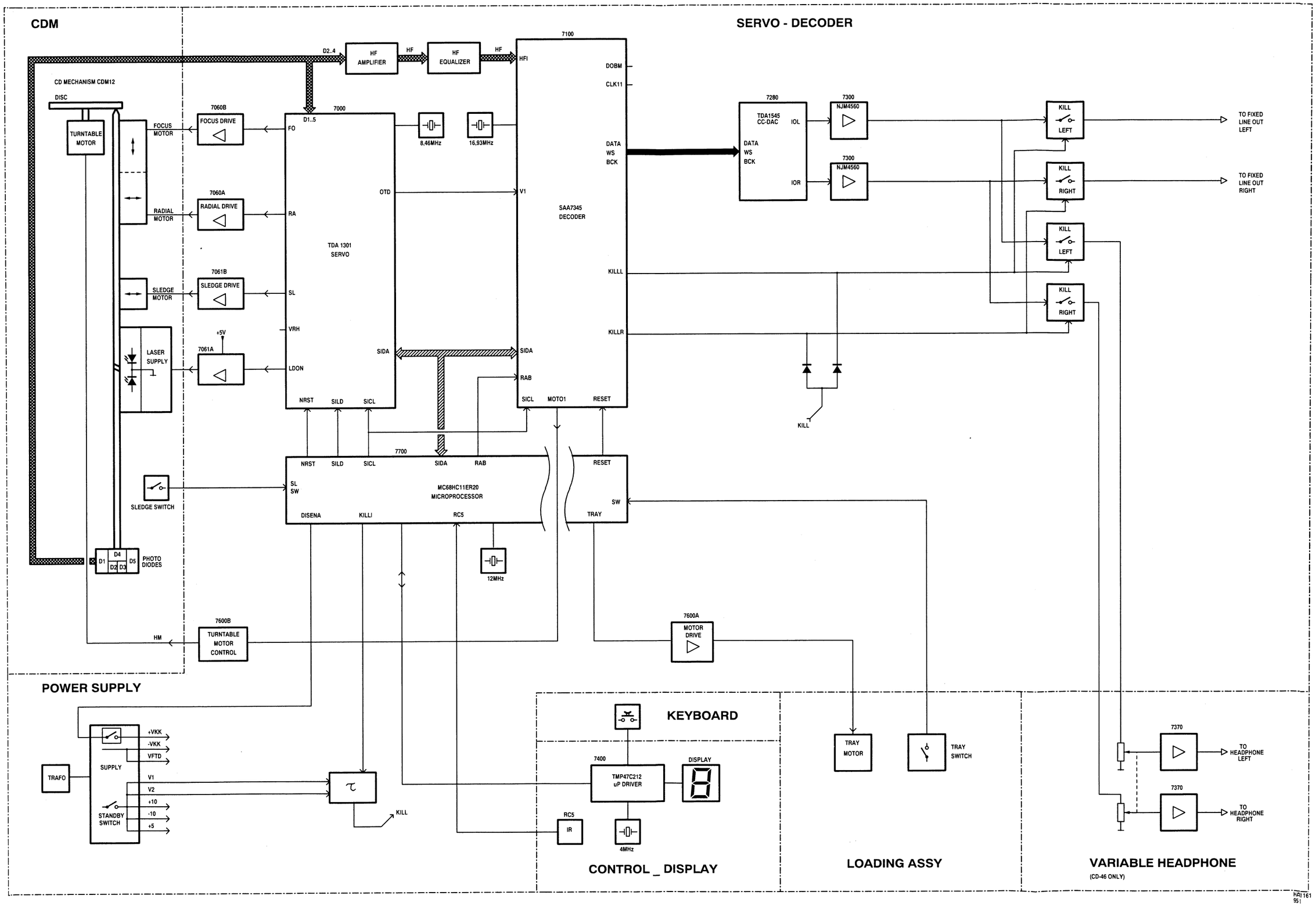
BLOCK DIAGRAM CD-36/CD-46



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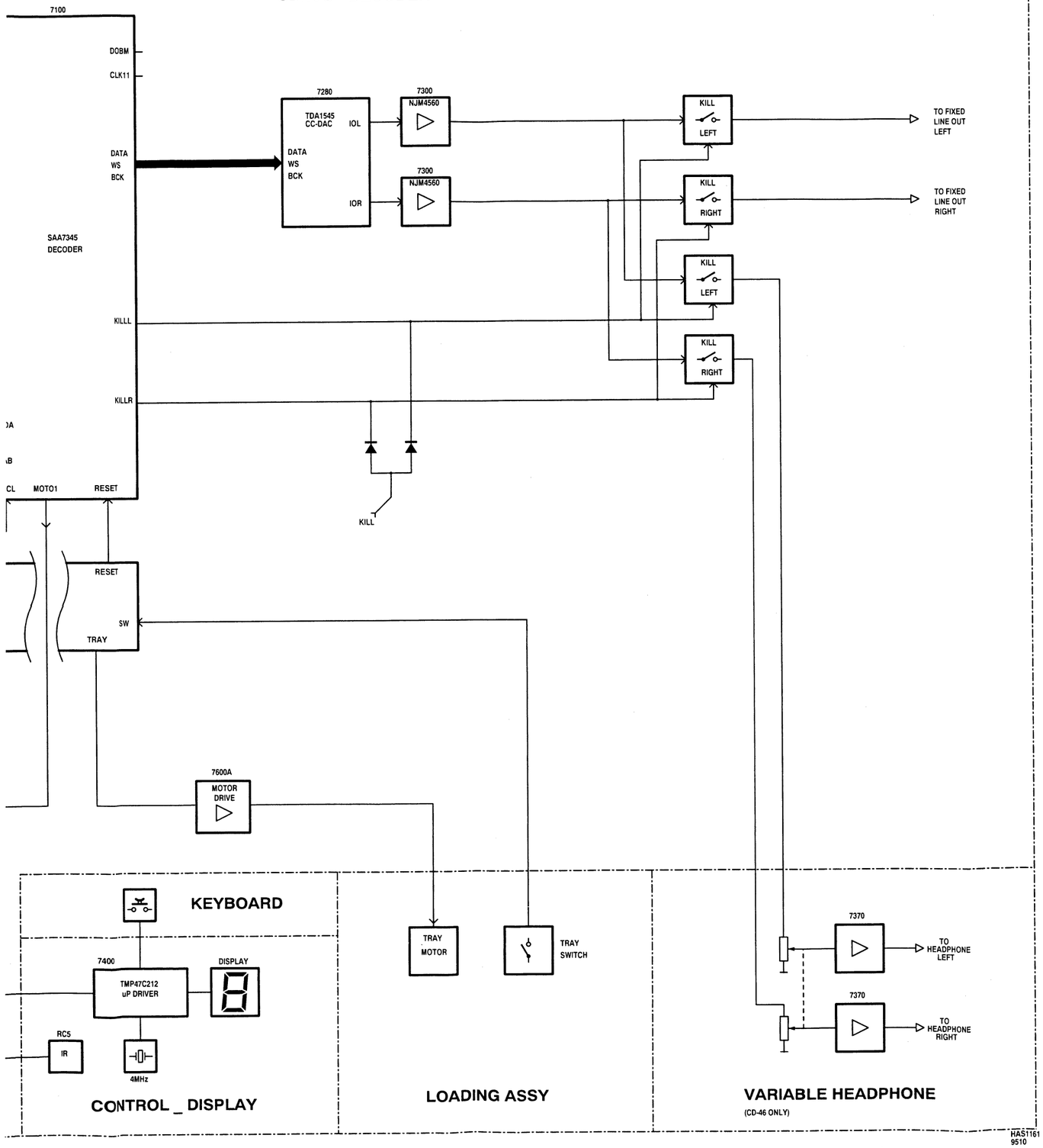
SERVO - DECODER



HAS1161
9510

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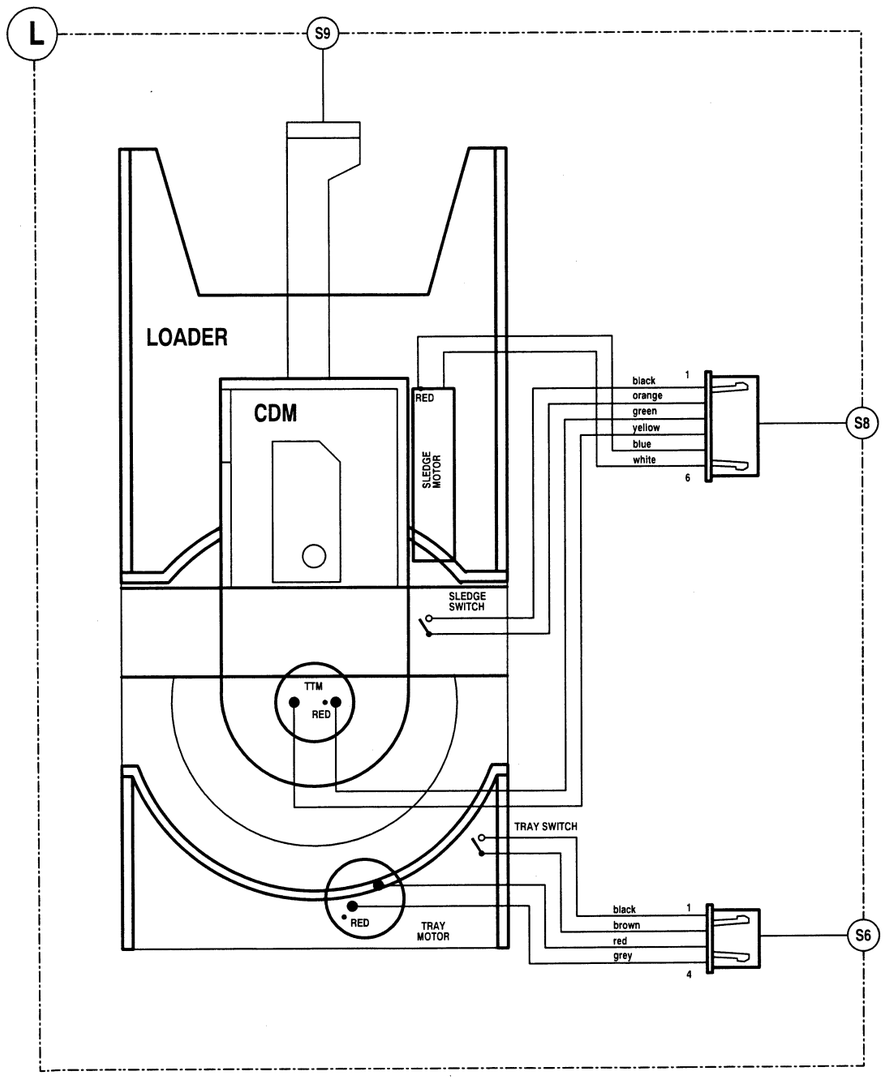
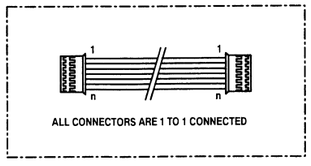
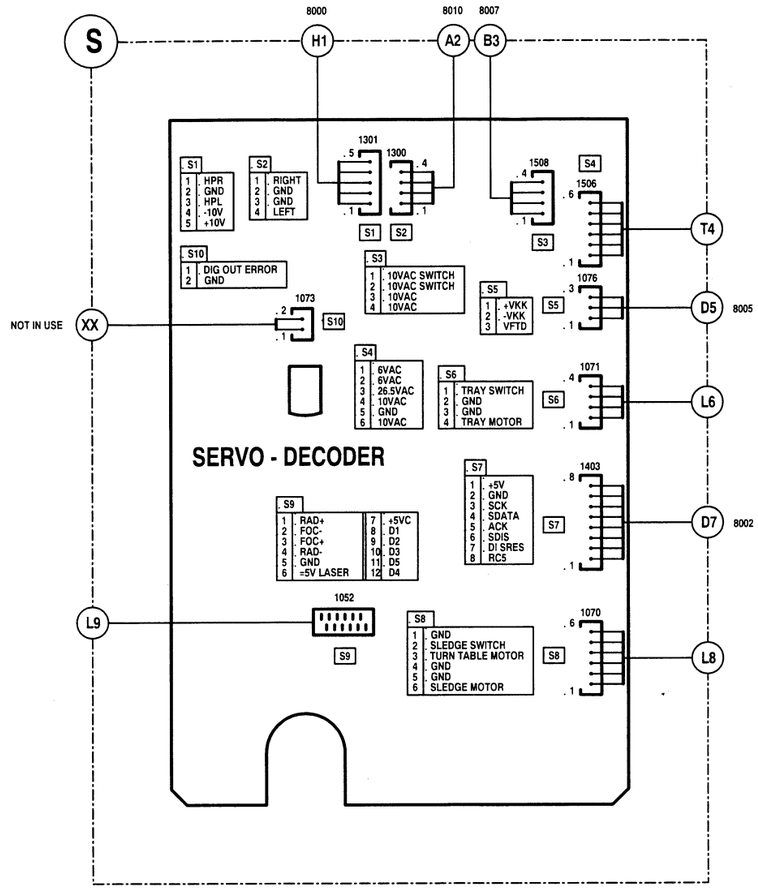
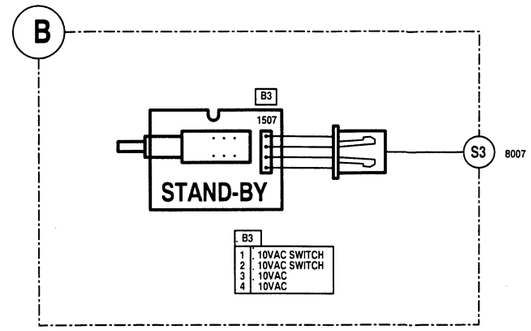
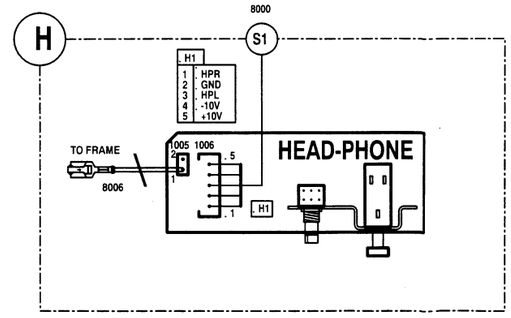
WIRING DIAGRAM

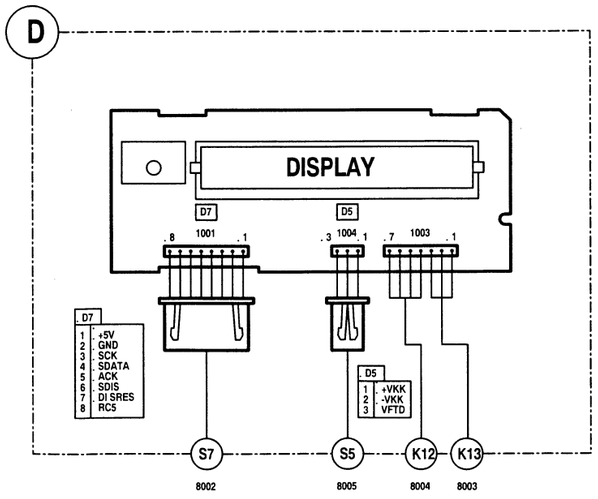


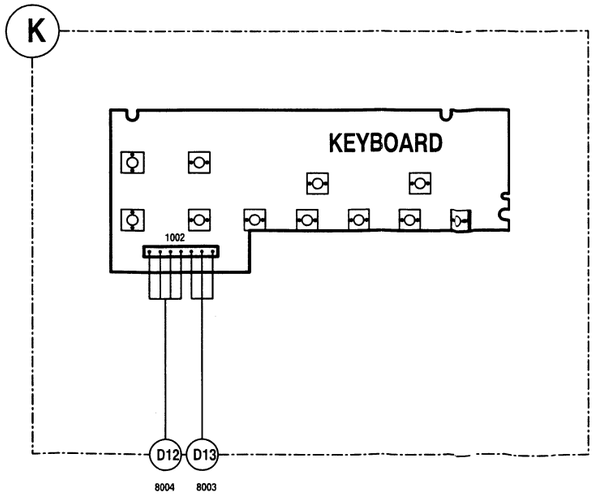




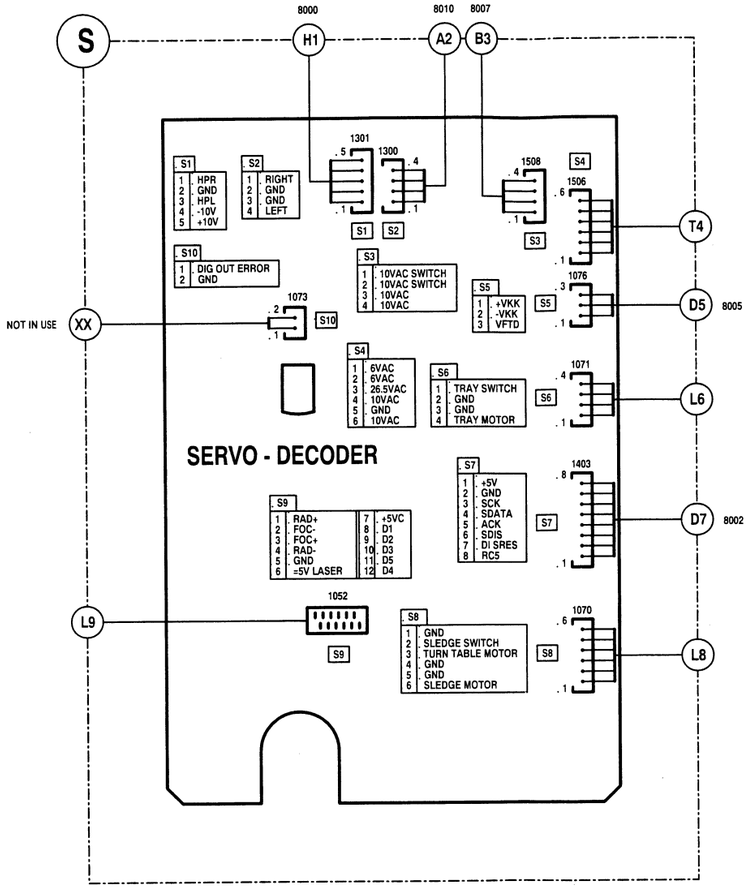


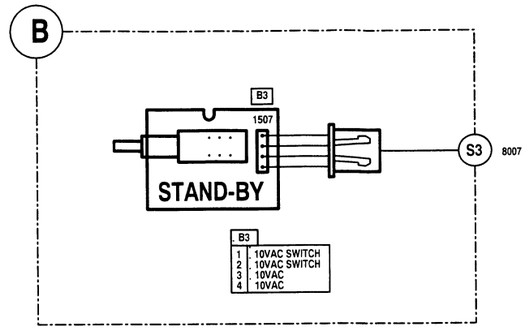


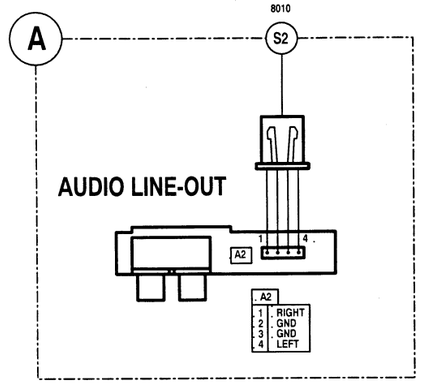


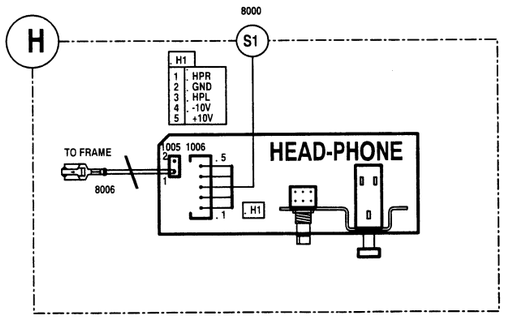


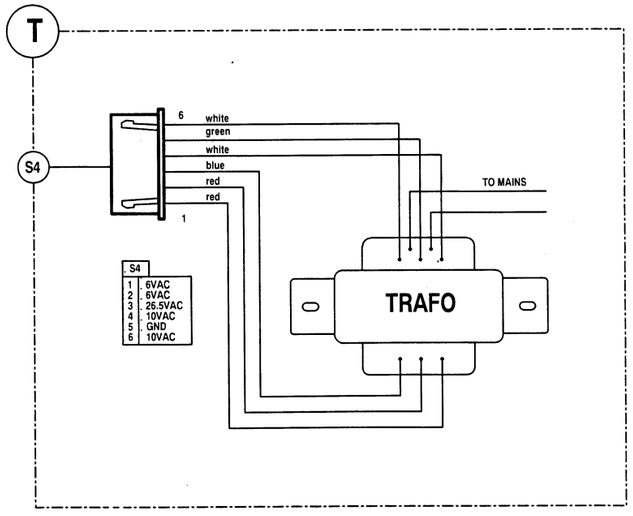
24

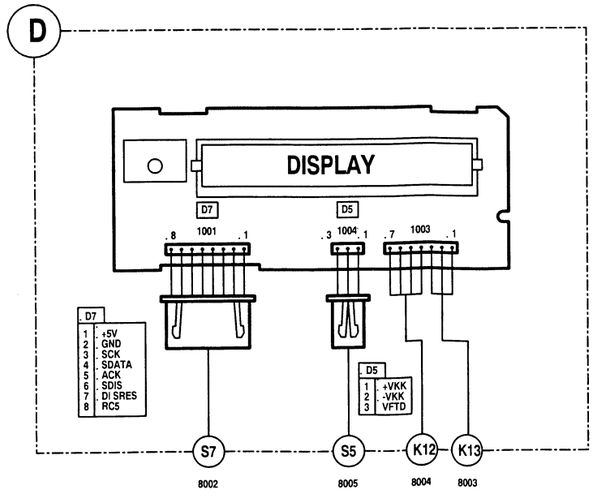


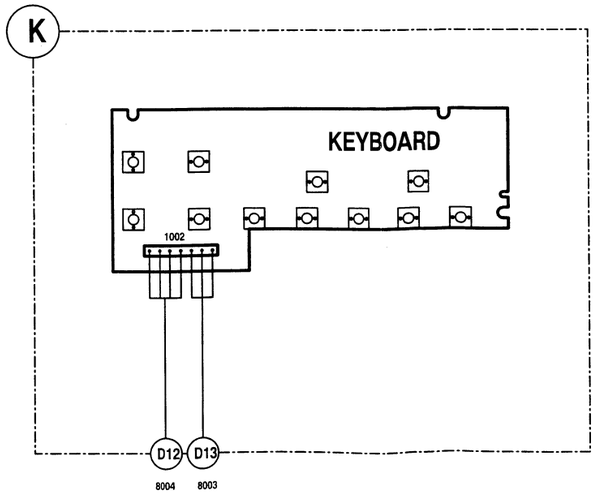






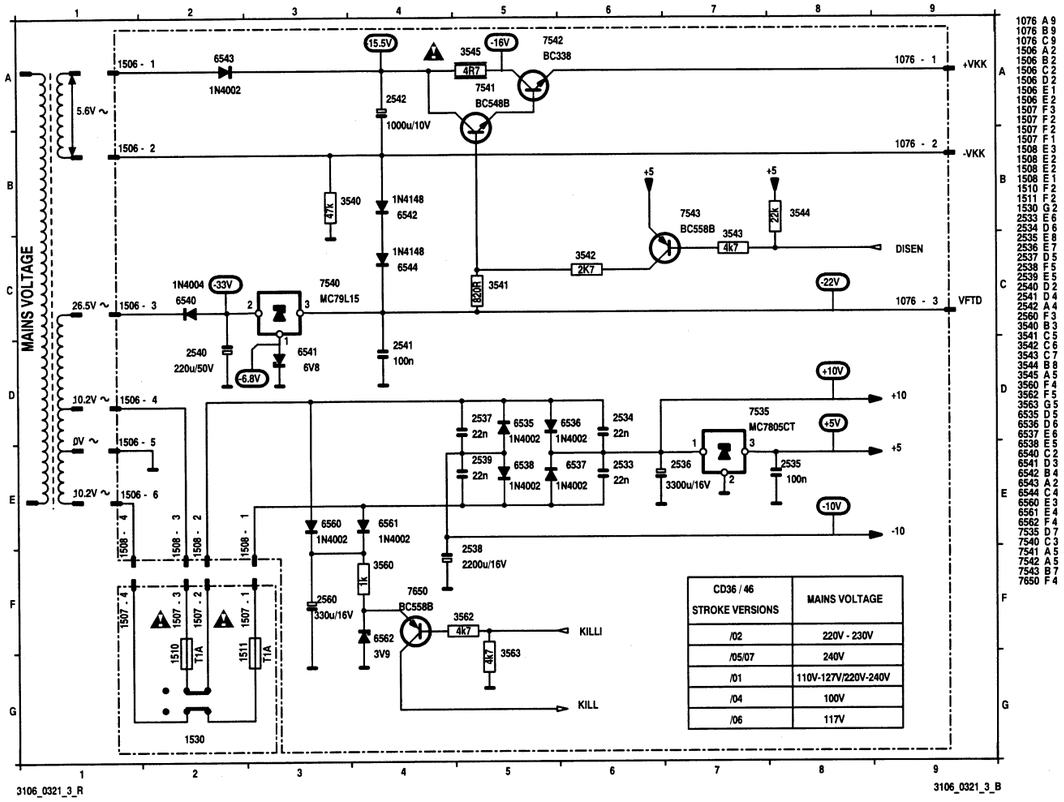




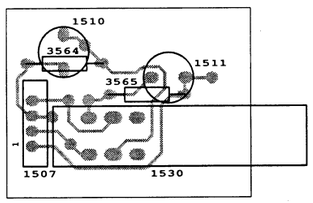


HAS1162
9509

POWER SUPPLY CIRCUIT DIAGRAM

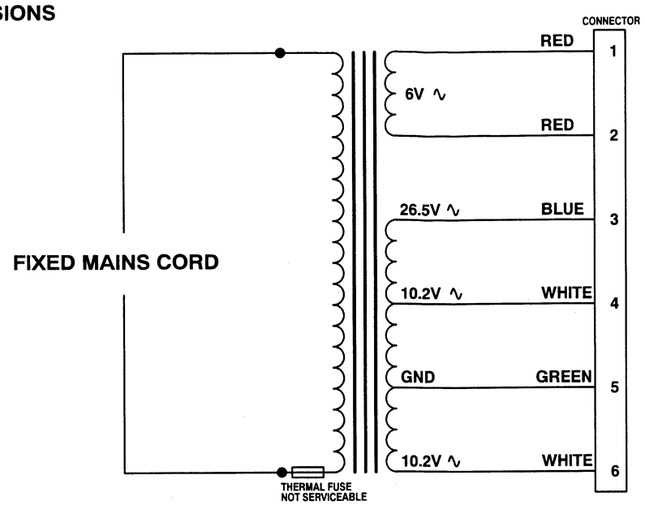


SWITCH PANEL



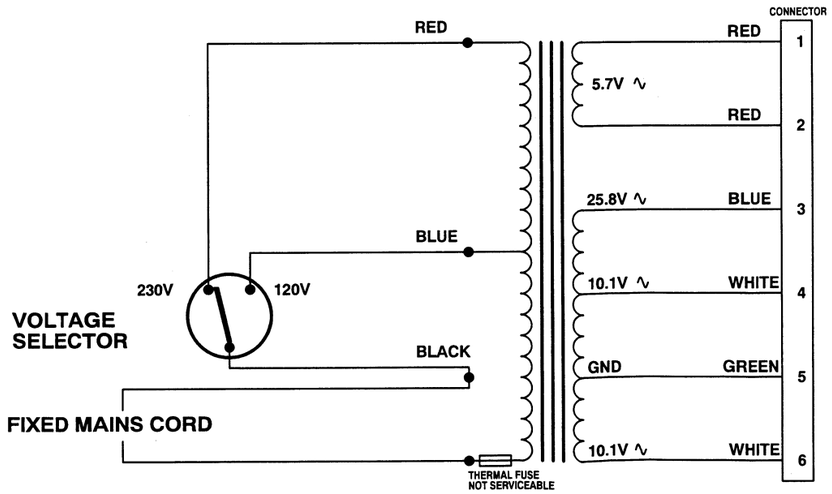
TRANSFORMER CONNECTIONS

/02/04/05/06/07 VERSIONS



VERSION	MAINS VOLTAGE	SERVICE CODE
/02	220V-230V	4822 146 31337
/05	240V	4822 146 31339
/04 (F)	100V	4822 146 31345
/06 (U)	117V	4822 146 31341
/07	240V	4822 146 21797

/01 VERSION



POSITION	MAINS VOLTAGE	SERVICE CODE
120V	110V-127V	4822 146 21796
230V	220V-240V	

TRANSFORMER AND VOLTAGE SELECTOR ARE ONE ASSEMBLY

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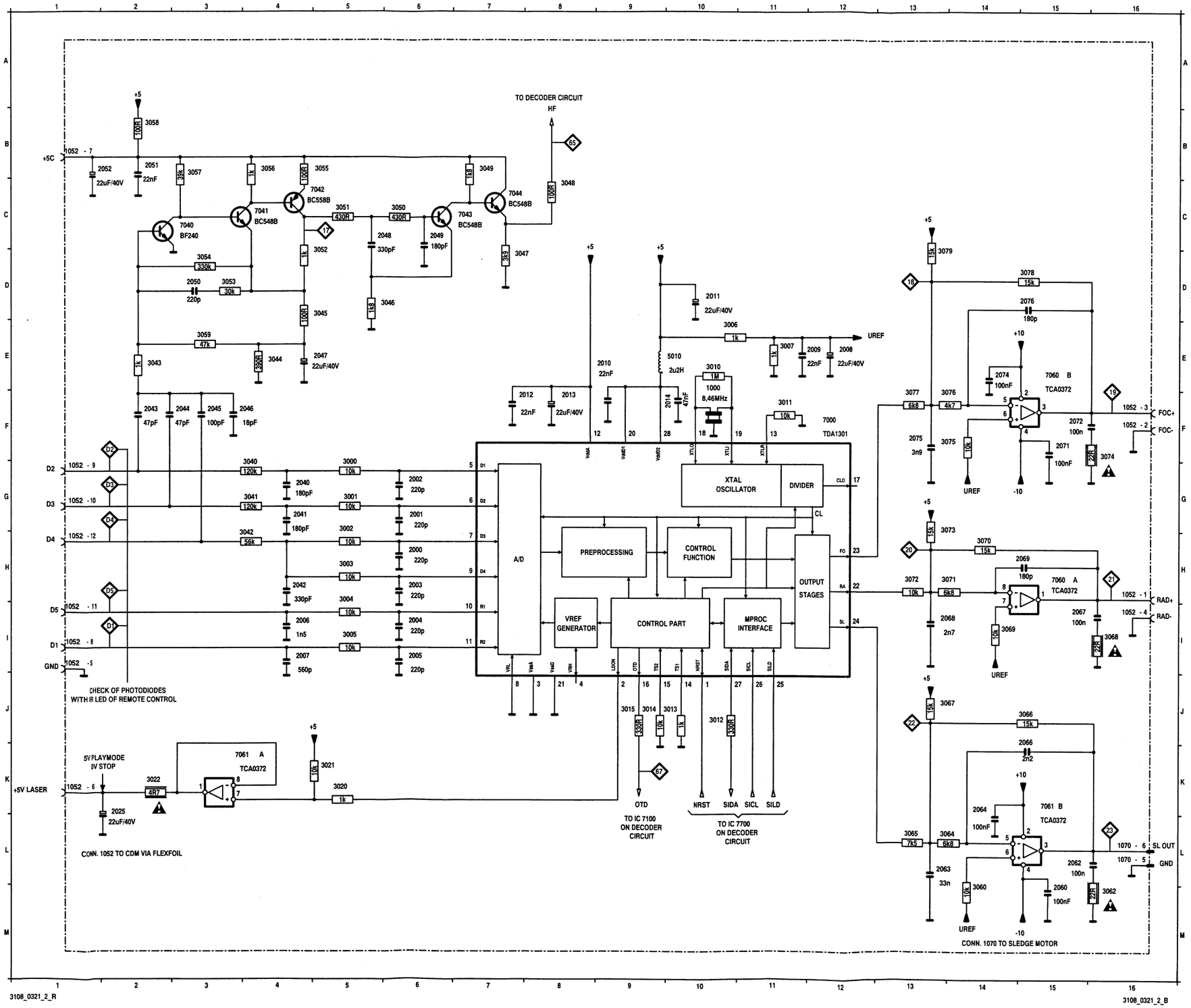
SERVO CIRCUIT DIAGRAM



eyepattern

2.5V
0,5us/DIV

STOP MODE
80mV
0,5us/DIV
ACTIVITY IN PLAY MODE

19 ACTIVITY DURING PLAY

21 ACTIVITY DURING PLAY

STOP MODE
20mV
0,5us/DIV
ACTIVITY IN PLAY MODE

23 SERVICE MODE 0
SL OUT: -3.5V
SL IN: +3.5V

67 +5V STOP MODE
0V PLAY MODE
HIGH PULSES PAUSE,NEXT,PREVIOUS

1000 E10
1052 H16
1052 F16
1052 F16
1052 I16
1052 I 1
1052 K 1
1052 B 1
1052 I 1
1052 G 1
1052 G 1
1052 I 1
1052 H 1
1070 L16
1070 L16
2000 H 6
2001 G 6
2002 G 6
2003 H 6
2004 I 6
2005 I 6
2006 I 4
2007 I 4
2008 E12
2009 E12
2010 E 9
2011 D10
2012 F 8
2013 F 8
2014 F10
2025 K 2
2040 G 4
2041 G 4
2042 H 4
2043 F 2
2044 F 3
2045 F 3
2046 F 4
2047 E 5
2048 C 6
2049 C 6
2050 D 3
2051 B 2
2052 B 2
2060 M15
2062 L15
2063 L13
2064 K14
2066 J15
2067 I15
2068 I14
2069 H15
2071 F15
2072 F15
2074 E14
2075 F13
2076 D15
3000 G 5
3001 G 5
3002 G 5
3003 H 5
3004 H 5
3005 I 5
3006 E10
3007 E11
3010 E10
3011 F11
3012 J10
3013 J10
3014 J 9
3015 J 9
3020 K 5
3021 K 5
3022 K 2
3040 G 4
3041 G 4
3042 H 4
3043 E 2
3044 E 4
3045 D 5
3046 D 6
3047 D 7
3048 C 8
3049 B 7
3050 C 6
3051 C 5
3052 D 5
3053 D 3
3054 D 3
3055 B 5
3056 B 4
3057 B 3
3058 B 2
3059 E 3
3060 M14
3062 M16
3064 L14
3065 L13
3066 J15
3067 J14
3068 I16
3069 I14
3070 H14
3071 H14
3072 H13
3073 G14
3074 F16
3075 F14
3076 F14
3077 F13
3078 D15
3079 D13
5010 E10
7000 F12
7040 C 3
7041 C 4
7042 C 4
7043 C 7
7044 C 7
7060 H15
7060 E15
7061 K 4
7061 K15

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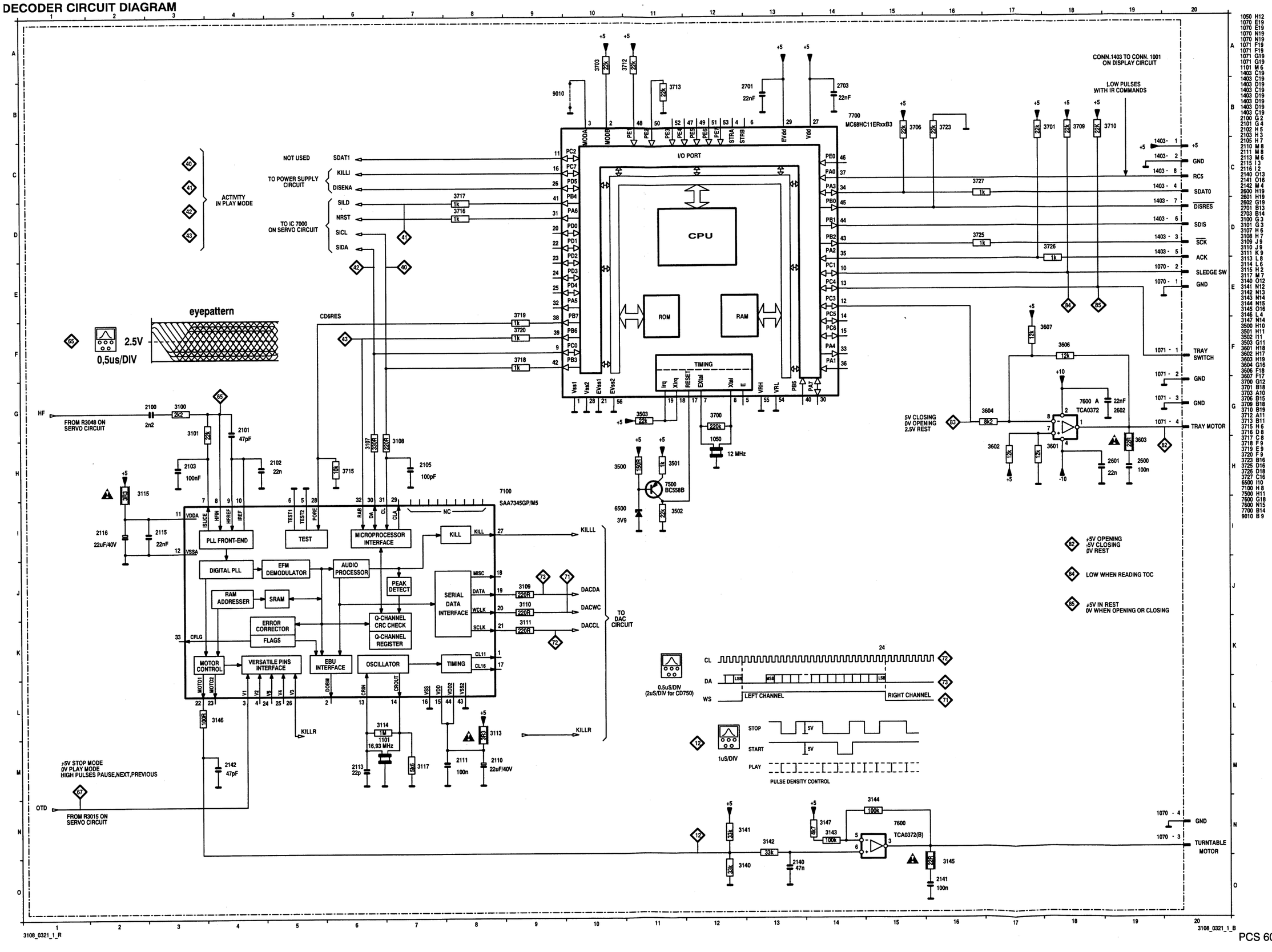
DECODER CIRCUIT DIAGRAM



3108_0321_1_R

3108_0321_1_B

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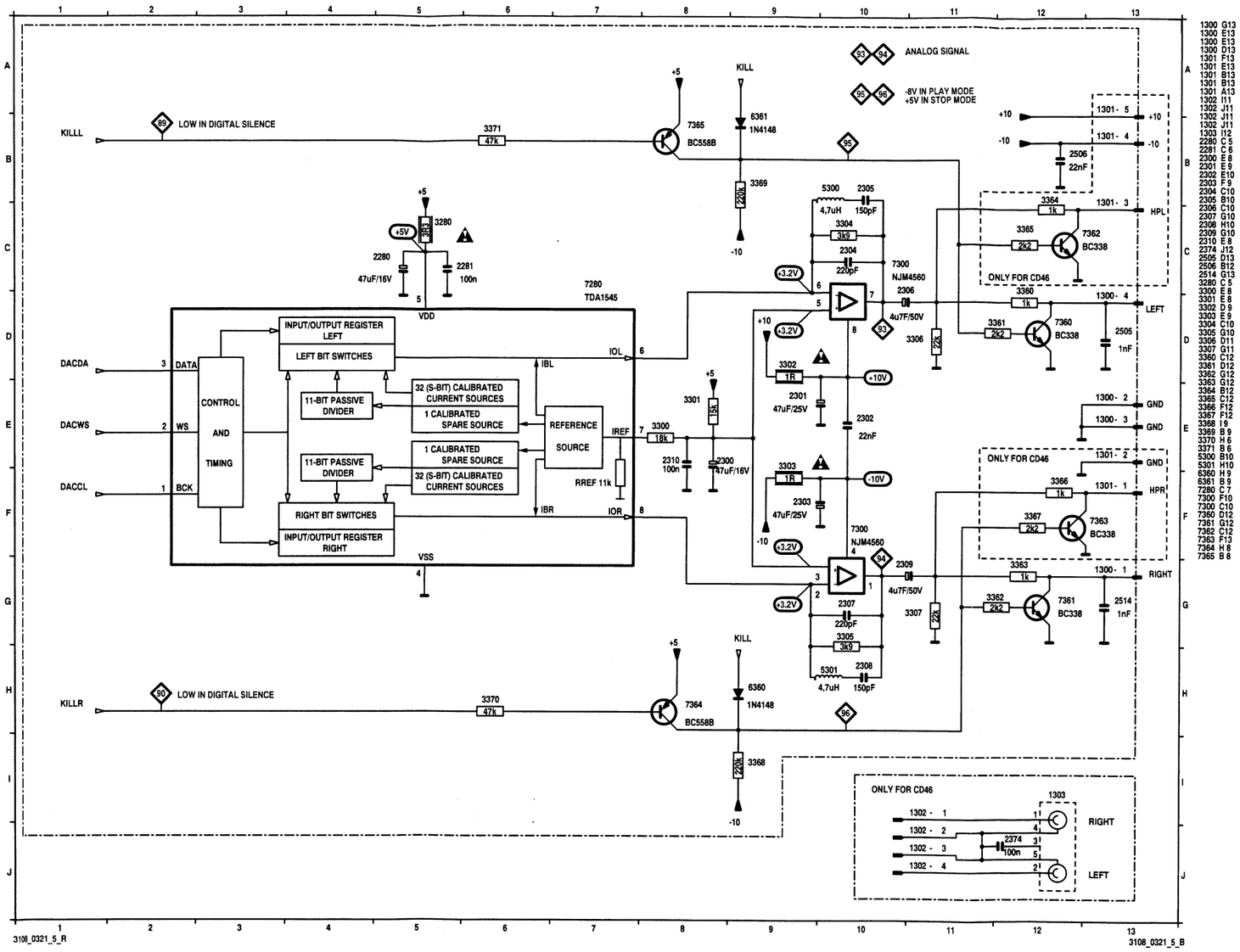
DAC CIRCUIT DIAGRAM



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MONO BOARD LAYOUT

1000 C 1	2010 C 1	2052 A 2	2105 A 4	2730 D 2	3040 B 1	3058 B 2	3078 C 3	3141 A 5	3701 D 4	3723 D 3	7700 D 3	9018 C 3	9037 D 2	9067 D 2	2280 A 5	2534 C 6	3307 A 5	3545 D 5	6544 D 5	9200 B 6	1005 D 9	1502 A 8	3402 A 7	9304 C 7
1050 C 4	2011 C 2	2060 D 2	2109 B 3	3000 B 1	3041 B 1	3059 A 1	3079 C 1	3142 A 4	3702 C 4	3725 D 3	7730 D 2	9019 B 4	9039 D 4	9068 D 2	2281 A 5	2535 C 5	3360 B 6	3560 D 5	6560 C 5	9201 B 6	1006 D 9	2004 A 7	3403 A 7	9305 D 9
1052 B 2	2012 C 1	2062 D 1	2110 A 3	3001 B 1	3042 B 2	3060 C 2	3080 B 1	3143 B 4	3703 C 4	3726 D 2	9000 A 2	9020 B 4	9040 C 4	9134 D 2	2300 B 5	2536 D 6	3361 B 5	3562 C 5	6561 C 5	9202 B 5	1007 B 8	2005 A 7	3404 A 7	9306 D 9
1070 D 2	2013 C 1	2063 D 1	2111 A 3	3002 B 1	3043 A 1	3062 D 1	3081 B 1	3144 C 4	3706 D 4	3727 D 2	9001 D 1	9021 C 4	9041 C 2	9135 D 2	2301 A 5	2537 C 6	3362 B 5	3563 C 5	6562 D 5	9203 C 5	1008 B 6	2370 D 8	3408 A 7	9310 A 7
1071 D 4	2014 C 1	2064 D 2	2112 A 3	3003 B 1	3044 A 1	3064 D 1	3100 A 2	3145 C 4	3709 C 4	5010 C 1	9002 C 1	9022 B 4	9042 D 2	9136 C 4	2302 A 6	2538 D 6	3363 B 6	3564 D 7	7280 A 5	9204 B 6	1020 C 7	2371 D 8	3409 A 8	9311 B 8
1073 B 4	2025 B 1	2066 D 1	2113 A 3	3004 B 2	3045 A 1	3065 C 1	3101 B 3	3146 A 4	3710 D 4	5100 A 3	9003 A 4	9023 B 4	9043 C 5	9137 C 4	2303 A 6	2539 C 6	3364 B 6	3565 D 7	7300 A 6	9205 B 6	1021 C 9	2372 D 8	3410 A 8	
1101 A 3	2040 B 2	2067 C 1	2114 A 3	3005 B 1	3046 A 2	3066 D 1	3107 A 4	3147 B 5	3711 D 4	6500 D 2	9004 B 2	9024 B 4	9044 C 3	----	2304 A 6	2540 C 6	3365 B 5	5300 A 6	7360 B 6	9206 A 5	1022 C 8	2373 D 9	3411 A 8	3080 B 1
1403 D 3	2041 B 2	2068 C 1	2115 A 3	3006 C 2	3047 A 2	3067 D 1	3108 A 4	3500 C 3	3712 D 4	7000 C 1	9005 B 2	9025 B 4	9045 D 1	1076 D 5	2305 A 5	2541 C 5	3366 B 5	5301 A 5	7361 B 5	9207 C 5	1023 C 8	2400 A 7	3412 A 7	3081 B 1
2000 B 1	2042 B 2	2069 C 3	2116 B 3	3007 C 2	3048 A 2	3068 B 1	3109 A 4	3501 C 3	3713 D 5	7040 A 1	9006 D 2	9026 B 4	9046 C 4	1300 B 6	2306 A 6	2542 D 5	3367 B 5	6360 B 5	7362 B 6	9208 C 5	1024 C 8	2401 A 7	3413 A 7	7000 C 1
2001 B 1	2043 A 2	2071 B 3	2118 B 4	3010 C 1	3049 A 2	3069 C 3	3110 A 4	3502 C 3	3714 D 5	7041 A 1	9007 C 2	9027 B 4	9047 C 3	1301 B 6	2307 A 6	2560 C 5	3368 B 5	6361 B 5	7363 B 5	9209 C 5	1025 C 9	3372 D 9	3414 A 7	7100 A 4
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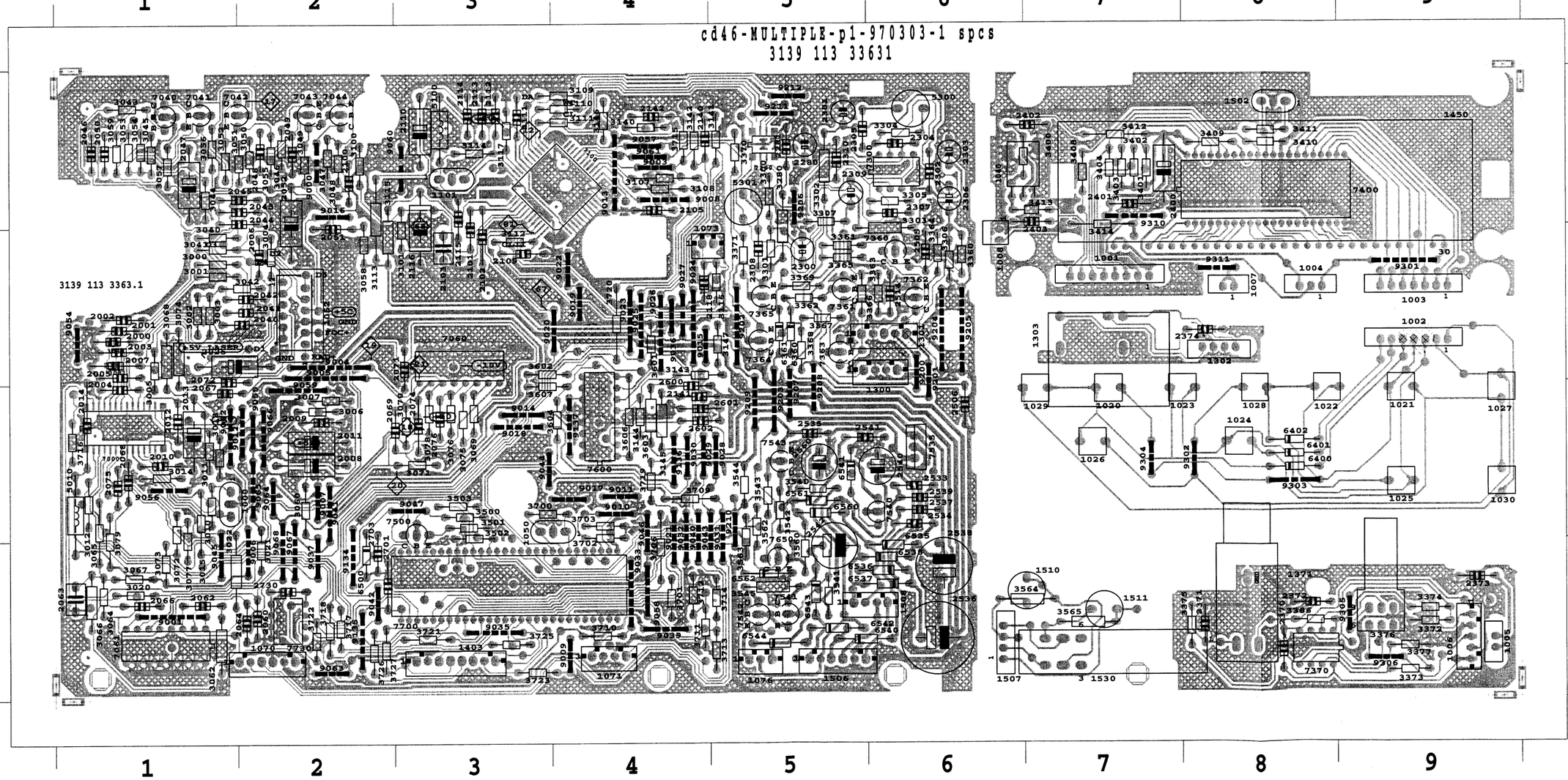
2003 B 1	2045 A 2	2074 C 3	2141 C 4	3012 C 1	3051 A 2	3071 C 3	3112 B 3	3601 B 4	3716 C 1	7043 A 2	9009 D 4	9029 C 4	9057 A 4	1303 B 7	2309 A 5	3300 A 5	3370 A 5	6536 D 6	7365 B 5	9211 A 5	1027 C 9	3374 D 9	6401 C 8	
2004 C 1	2046 A 1	2075 C 1	2142 A 4	3013 C 1	3052 A 1	3072 C 1	3113 A 2	3602 B 3	3717 D 2	7044 A 2	9010 C 4	9030 C 4	9059 C 2	1506 D 5	2310 A 5	3301 B 5	3371 B 5	6537 D 6	7535 C 6	9212 A 5	1028 C 8	3375 D 8	6402 C 8	
2005 B 1	2047 A 1	2076 C 3	2600 C 4	3014 C 1	3053 A 1	3073 D 1	3114 A 3	3603 C 4	3718 D 2	7060 B 3	9011 C 4	9031 C 5	9061 A 4	1507 D 6	2374 B 8	3302 A 5	3540 C 5	6538 D 6	7540 C 6	----	1029 C 7	3376 D 9	7370 D 8	
2006 B 2	2048 A 2	2100 A 2	2601 C 4	3015 C 1	3054 A 1	3074 B 1	3115 B 2	3604 C 4	3719 C 4	7061 D 1	9012 C 2	9032 C 4	9063 D 2	1508 D 6	2505 B 6	3303 B 6	3541 D 5	6540 D 5	7541 D 5	1001 B 7	1030 C 9	3377 D 9	7400 A 8	
2007 B 1	2049 A 2	2101 B 3	2602 C 4	3020 D 1	3055 A 2	3075 C 3	3116 B 5	3606 C 4	3720 B 4	7100 A 4	9014 C 3	9033 D 4	9064 C 2	1510 D 7	2506 C 6	3304 A 6	3542 C 5	6541 C 5	7542 D 5	1002 B 9	1040 A 6	3386 D 8	9301 B 9	
2008 C 2	2050 A 1	2102 B 3	2701 D 2	3021 D 2	3056 A 1	3076 C 3	3117 A 3	3607 C 3	3721 D 3	7500 C 3	9015 B 4	9035 D 3	9065 C 2	1511 D 7	2514 B 6	3305 A 6	3543 C 5	6542 D 5	7543 C 5	1003 B 9	1371 D 8	3400 A 7	9302 C 8	
2009 C 2	2051 B 2	2103 B 3	2703 D 2	3022 D 1	3057 A 1	3077 C 1	3140 A 4	3700 C 3	3722 D 2	7600 C 4	9016 A 2	9036 B 4	9066 C 2	1530 D 7	2533 C 6	3306 B 6	3544 C 5	6543 D 5	7650 D 5	1004 B 8	1450 B 8	3401 A 7	9303 C 8	



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MAIN PANEL SOLDER SIDE

9203 C 5	6560 C 5	3542 C 5	3302 A 5	2308 B 5	9134 D 2	9042 D 2	9020 B 3	9000 A 2	3723 D 3	3607 C 3	3115 B 2	3072 C 1	3050 A 1	3007 C 2	2114 A 3	2064 D 1	2012 C 1	1000 C 1
9204 B 5	6561 C 5	3543 C 5	3303 B 5	2309 A 5	9135 D 2	9043 C 4	9021 C 4	9001 D 1	3725 D 3	3700 C 3	3116 B 4	3073 D 1	3051 A 1	3010 C 1	2115 A 3	2066 D 1	2013 C 1	1050 C 3
9205 B 5	6562 D 5	3544 C 4	3304 A 5	2310 A 5	9136 C 4	9044 C 3	9022 B 3	9002 C 1	3726 D 2	3701 D 4	3117 A 3	3074 B 1	3052 A 1	3011 C 1	2116 B 2	2067 C 1	2014 C 1	1052 B 2
9206 A 5	7280 A 5	3545 D 5	3305 A 5	2505 B 5	9137 C 3	9045 D 1	9023 B 4	9003 A 4	3727 D 2	3702 C 4	3140 A 4	3075 C 3	3053 A 1	3012 C 1	2118 B 4	2068 C 1	2025 B 1	1070 D 1
9207 C 5	7300 A 5	3560 D 5	3306 B 5	2506 C 5	----	9046 C 4	9024 B 4	9004 B 2	5010 C 1	3703 C 4	3141 A 4	3076 C 3	3054 A 1	3013 C 1	2140 A 4	2069 C 2	2040 B 1	1071 D 4
9208 C 5	7360 B 5	3562 C 5	3307 A 5	2514 B 5	1076 D 5	9047 C 2	9025 B 4	9005 B 2	5100 A 3	3706 D 4	3142 A 4	3077 C 1	3055 A 1	3014 C 1	2141 C 4	2071 B 2	2041 B 1	1073 B 4
9209 C 4	7361 B 5	3563 C 4	3360 B 5	2533 C 5	1300 B 5	9054 B 1	9026 B 4	9006 D 1	6500 D 2	3709 C 4	3143 B 4	3078 C 2	3056 A 1	3015 C 1	2142 A 4	2072 B 1	2042 B 1	1101 A 3
9210 C 4	7362 B 5	5300 A 5	3361 B 5	2534 C 5	1301 B 5	9055 C 1	9027 B 4	9007 C 2	7000 C 1	3710 D 4	3144 C 4	3079 C 1	3057 A 1	3020 D 1	2600 C 4	2074 C 2	2043 A 1	1403 D 3
9211 A 5	7363 B 5	5301 A 4	3362 B 5	2535 C 5	1506 D 5	9056 C 1	9028 C 4	9008 A 4	7040 A 1	3711 D 4	3145 C 4	3080 B 1	3058 B 2	3021 D 1	2601 C 4	2075 C 1	2044 A 1	2000 B 1
9212 A 5	7364 B 5	6360 B 5	3363 B 5	2536 D 5	1508 D 5	9057 A 4	9029 C 4	9009 D 3	7041 A 1	3712 D 4	3146 A 4	3081 B 1	3059 A 1	3022 D 1	2602 C 4	2076 C 3	2045 A 1	2001 B 1
	7365 B 5	6361 B 5	3364 B 5	2537 C 5	2280 A 5	9058 D 4	9030 C 4	9010 C 4	7042 A 1	3713 D 4	3147 B 4	3100 A 2	3060 C 2	3040 B 1	2701 D 2	2100 A 2	2046 A 1	2002 B 1
	7535 C 5	6535 D 5	3365 B 5	2538 D 5	2281 A 5	9059 C 2	9031 C 4	9011 C 4	7043 A 2	3714 D 4	3500 C 3	3101 B 2	3062 D 1	3041 B 1	2703 D 2	2101 B 3	2047 A 1	2003 B 1
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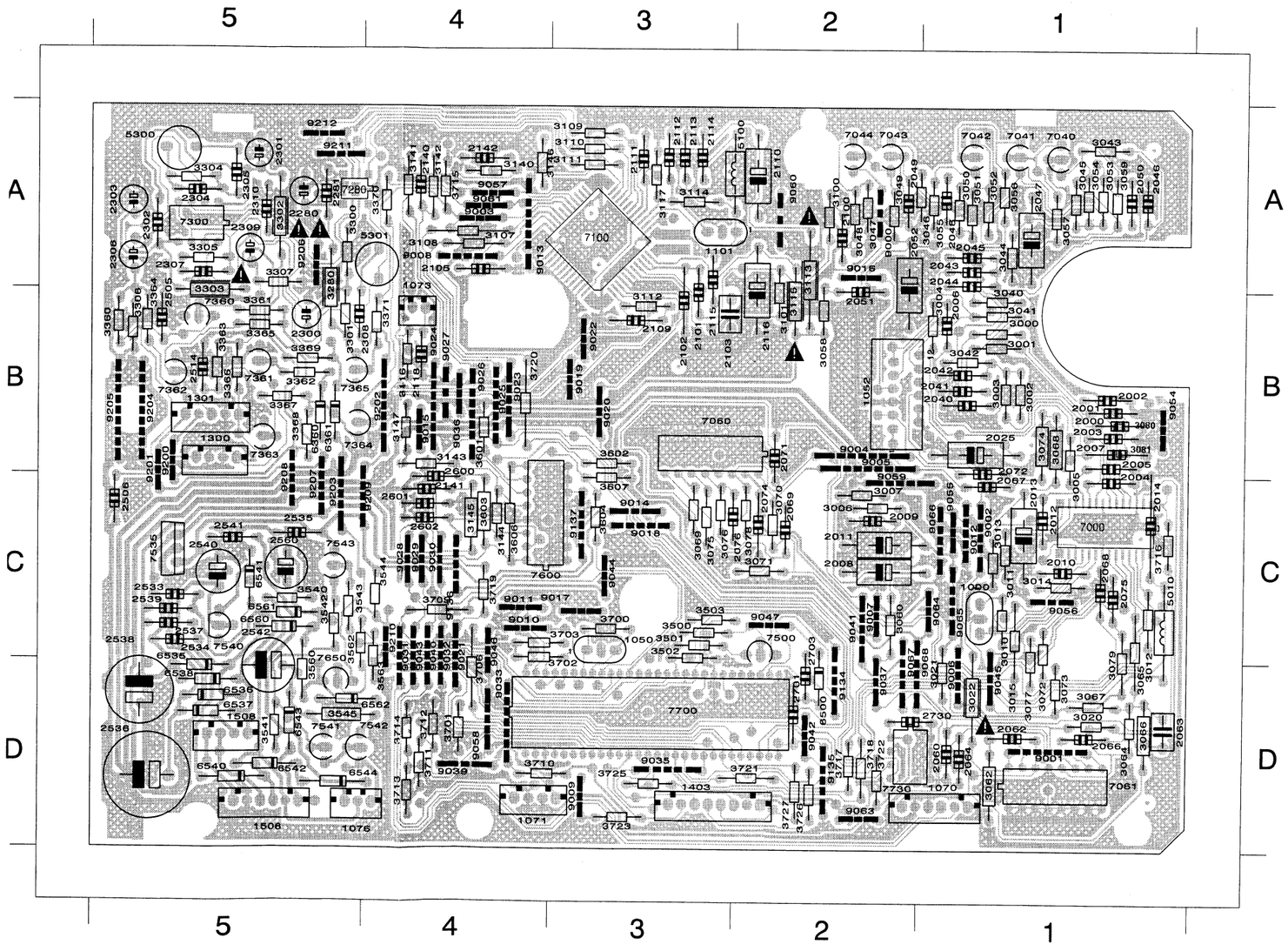
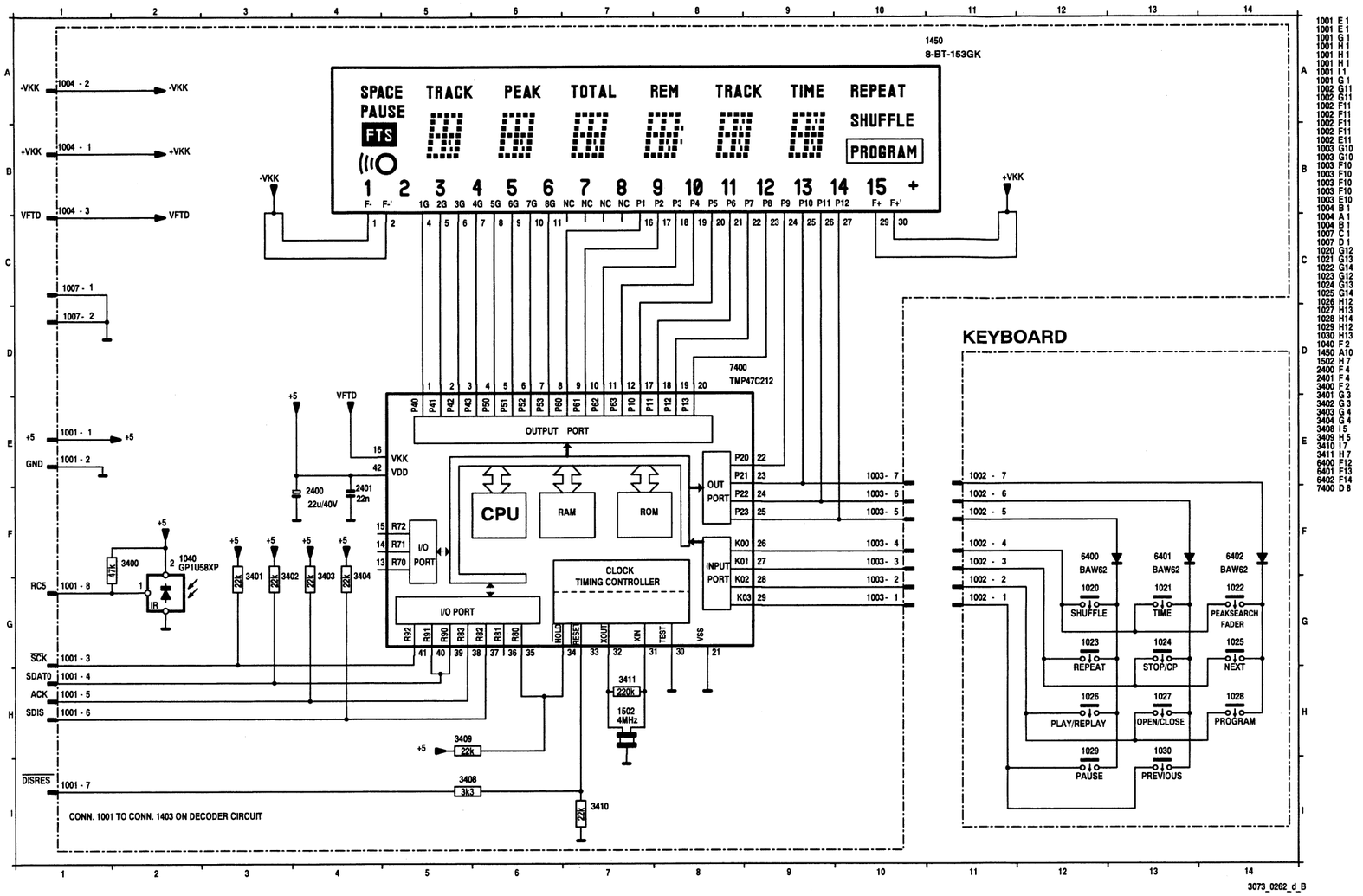
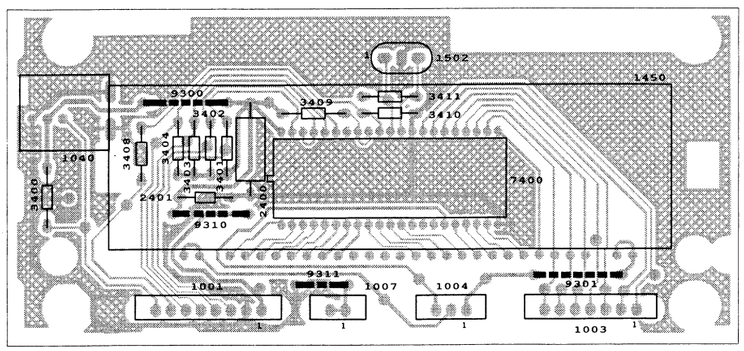
	7650 D 5	6541 C 5	3370 A 4	2560 C 5	2304 A 5	9065 C 1	9037 D 2	9016 A 2	7500 C 2	3719 C 4	3602 B 3	3111 A 3	3068 B 1	3046 A 1	3003 B 1	2110 A 2	2052 A 2	2008 C 2
	9200 B 5	6542 D 5	3371 B 4	3280 B 5	2305 A 5	9066 C 1	9039 D 4	9017 C 3	7600 C 4	3720 B 4	3603 C 4	3112 B 3	3069 C 3	3047 A 2	3004 B 1	2111 A 3	2060 D 1	2009 C 2
	9201 B 5	6543 D 5	3540 C 5	3300 A 5	2306 A 5	9067 D 2	9040 C 4	9018 C 3	7700 D 3	3721 D 2	3604 C 3	3113 A 2	3070 C 2	3048 A 2	3005 B 1	2112 A 3	2062 D 1	2010 C 1
	9202 B 4	6544 D 5	3541 D 5	3301 B 5	2307 A 5	9068 D 1	9041 C 2	9019 B 3	7730 D 2	3722 D 2	3606 C 4	3114 A 3	3071 C 2	3049 A 2	3006 C 2	2113 A 3	2063 D 1	2011 C 2



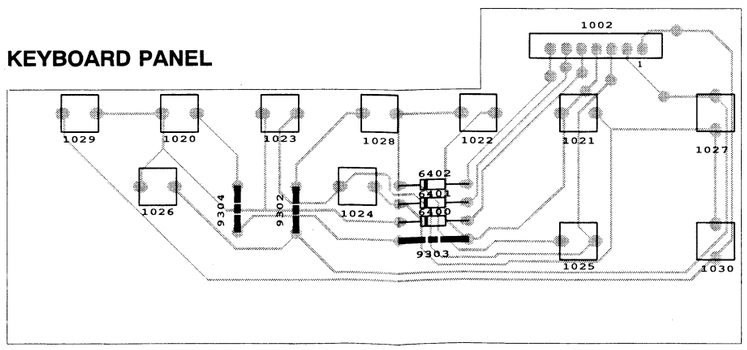
CONTROL AND DISPLAY CIRCUIT DIAGRAM

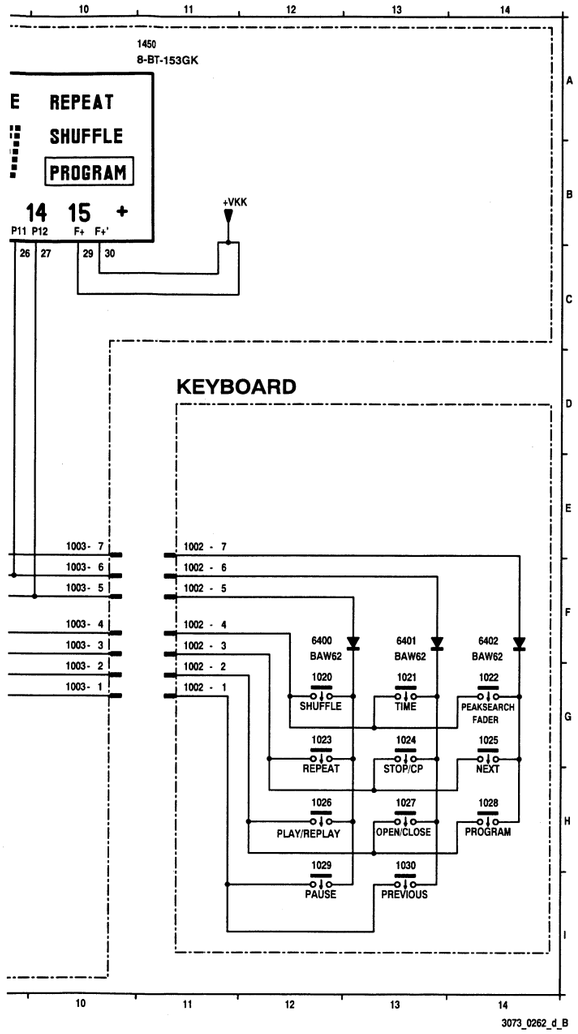


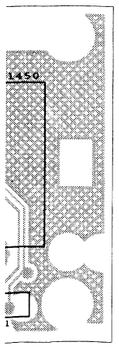
DISPLAY PANEL



KEYBOARD PANEL







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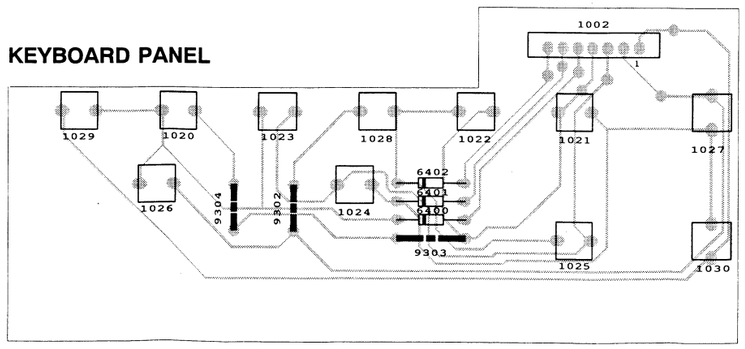
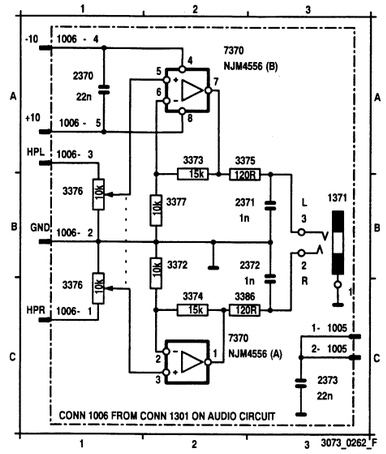
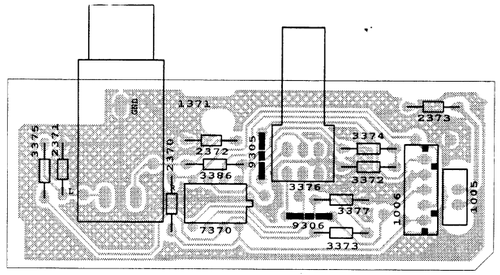


HEADPHONE CIRCUIT DIAGRAM(CD46 only)

1005 C 3 1006 A 1 2372 B 3 3375 A 3 7370 C 2
1005 C 3 1006 A 1 2373 C 3 3376 C 1 7370 A 2
1006 C 1 1371 B 3 3372 B 2 3376 B 1
1006 B 1 2370 A 1 3373 A 2 3377 B 2
1006 A 1 2371 B 2 3374 C 2 3386 C 3



HEADPHONE PANEL(CD46 only)



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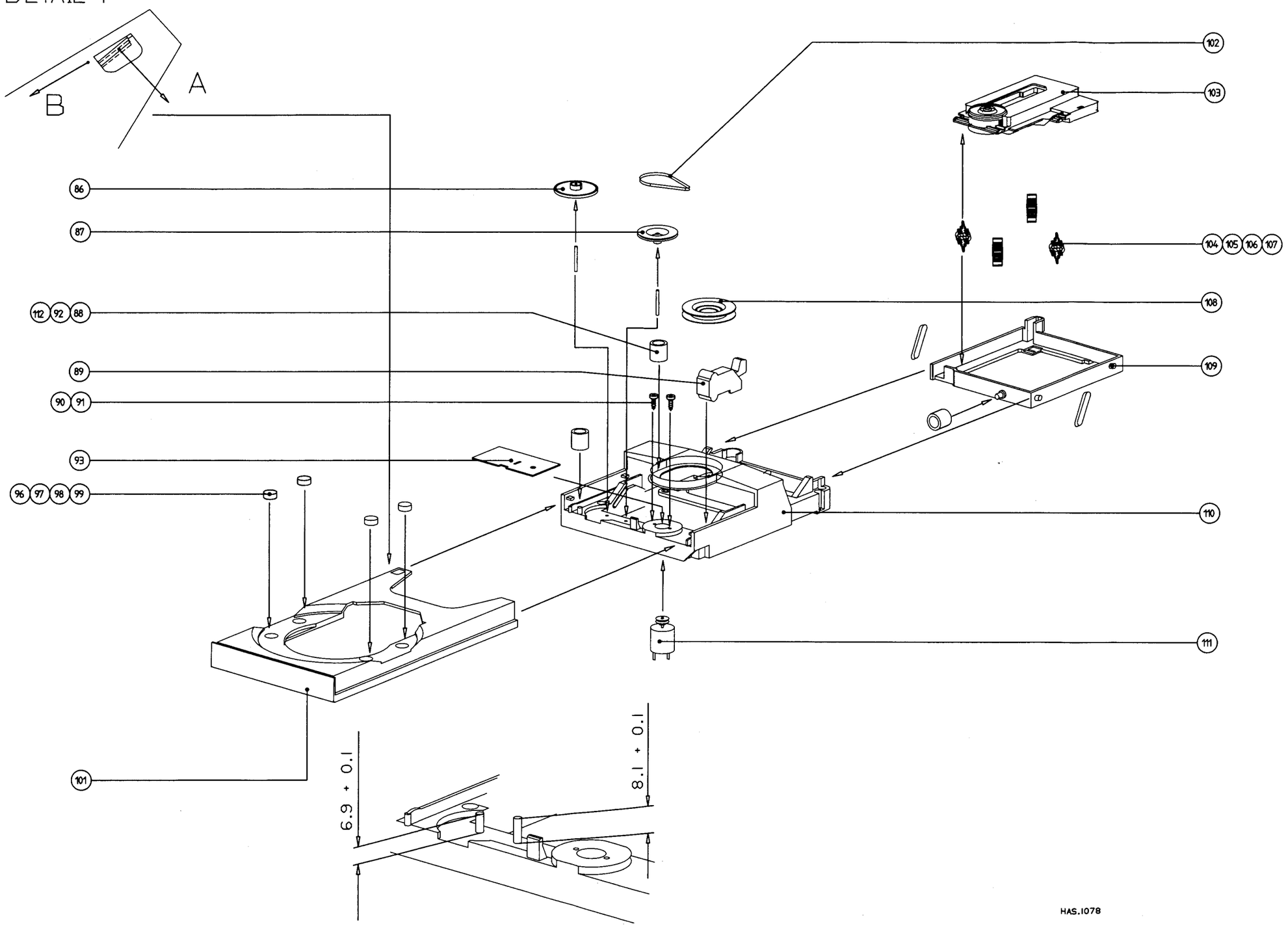
LOADER

DETAIL I

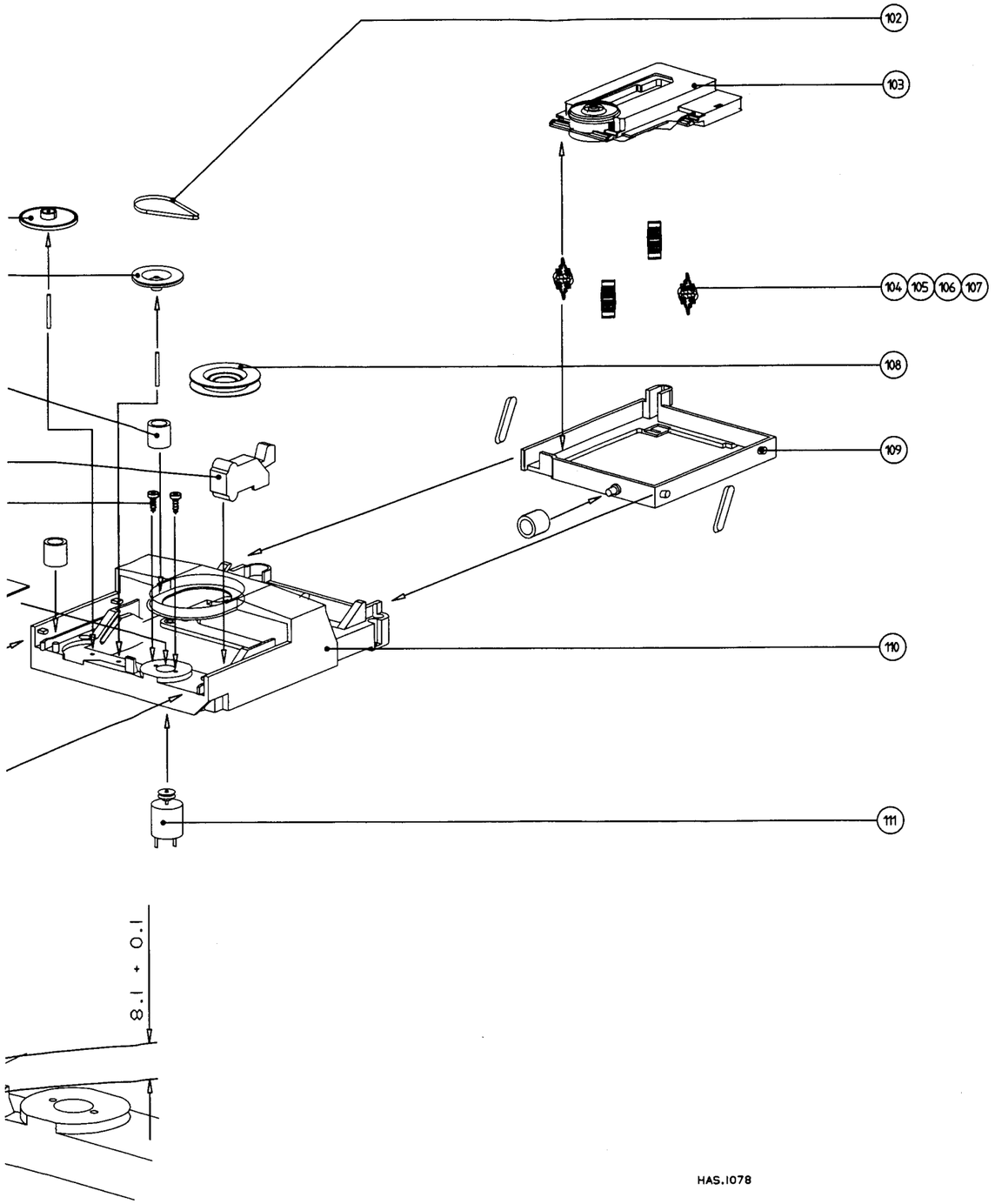


PARTSLIS

86
87
88,92,112
89
93
96,97,98,9
101
102
103
104,105,10
108
109
110
111

Screws

90,91



HAS.1078

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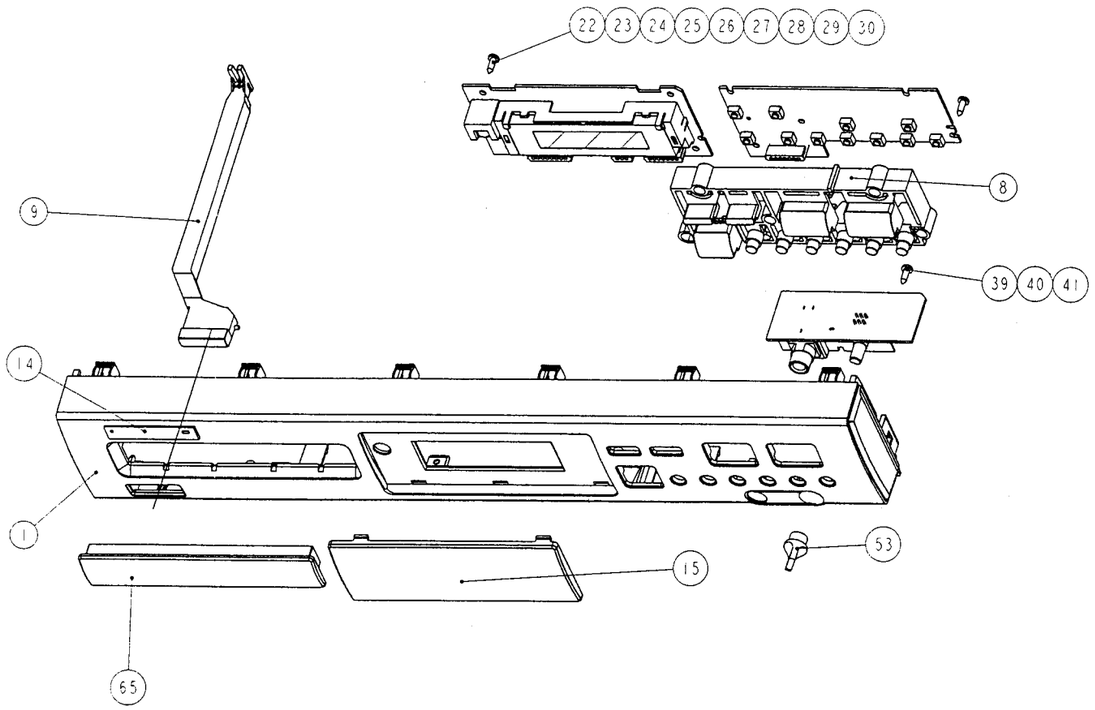
PARTSLIST LOADER

86	4822 528 81464	DRIVE PINION
87	4822 528 81465	PULLEY
88,92,112	4822 325 60379	DAMPING GROMMET
89	4822 276 13222	SWITCH
93	4822 444 60816	COVER PLATE
96,97,98,99	4822 325 80511	ORNAMENTAL TULE
101	4822 444 50679	SLIDE
102	4822 358 31168	BELT
103	4822 691 30278	CDM12.1 MECHANISM
104,105,106,107	4822 325 50215	SUSPENSION
108	4822 402 61412	CLAMPER ASSY
109	4822 464 50895	SUBCHASSIS
110	4822 464 50678	CHASSIS
111	4822 361 21492	MOTOR

Screws

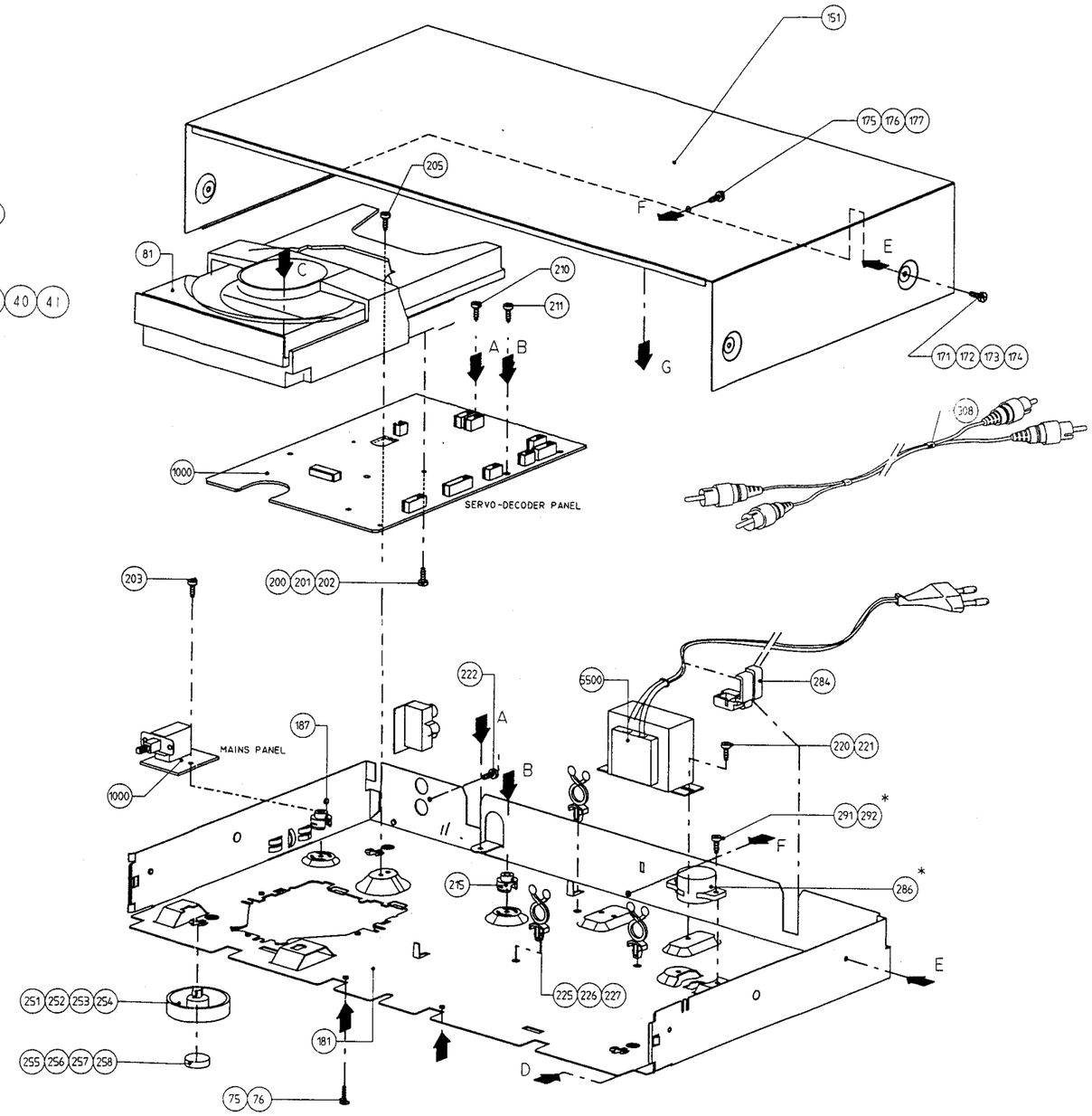
90,91	selftapping screw 2,2 x 4

EXPLODED VIEW



(VERS. :VERSION, U:U.S.A, F:JAPAN, K:FAR EAST, **:EUROPE)

POS. NO	VERS. COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (USA/JAPAN)
1		4822 459 04604	FRONT PANEL	QP45904604
8		4822 410 63683	KNOB UNIT ASSY	QP41063683
9		4822 402 61557	POWER LINK	QP40261557
14		4822 454 11825	MARANTZ BADGE	185J251012
15		4822 450 62406	WINDOW ASSY	QP45062406
65		4822 444 50738	TRAY FRONT ASSEMBLY	QP44450738
151		4822 444 61045	COVER ASSY	QP44461045
251				
I		4822 462 42163	FOOT ASSY	QP46242163
254				
255				
I		4822 462 40683	PLATE (FOOT)	QP46240683
258				
284		4822 532 60948	BUSH, AC CORD	QP53260948
340	/01/02/05	4822 736 15446	USERS GUIDE CD38	QP73615446
365		4822 218 10538	REMOTE CONTROL RD6843	QP21810538



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8. ELECTRICAL PARTS LIST

(VERS. :VERSION, U:U.S.A, F:JAPAN, K:FAR EAST, ✱✱:EUROPE)

POS. NO	VERS. COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (USA/JAPAN)
			MISCELLANEOUS	
		4822 256 92151	DISPLAY HOLDER	QP25692151
1000		4822 242 73557	RESONATOR 8.46MHz	QP24273557
1020				
1		4822 276 13114	SWITCH TACT	QP27613114
1030				
1040		4822 214 52009	IR RECEIVER GP1U58XP	QP21452009
1050		5322 242 73686	RESONATOR 12.0MHz	QQ24273686
1101		4822 242 81865	RESONATOR 16.93MHz	QP24281865
1303		4822 267 31731	ANALOG OUT SOCKET	QP26731731
1450		4822 130 91329	FL DISPLAY 8-BT-153GK	QP13091329
1502		4822 242 72527	RESONATOR 4MHz	QP24272527
⚠ 1510		4822 071 51002	FUSE RADIAL T 1A	QP07151002
⚠ 1511		4822 071 51002	FUSE RADIAL T 1A	QP07151002
⚠ 1530		4822 276 13489	MAIN SWITCH	QP27613489
			CAPACITORS	
2000				
1		4822 122 10466	220PF 10% 50V	QP12210466
2005				
2006		4822 126 12878	1.5NF 10% 16V	QP12612878
2007		4822 122 10459	560PF 10% 50V	QP12210459
2008		5322 124 21643	22UF 20% 40V	QQ12421643
2009		4822 126 11585	22NF +80-20% Y5V 25V	QP12611585
2010		4822 126 11585	22NF +80-20% Y5V 25V	QP12611585
2011		5322 124 21643	22UF 20% 40V	QQ12421643
2012		4822 126 11585	22NF +80-20% Y5V 25V	QP12611585
2013		5322 124 21643	22UF 20% 40V	QQ12421643
2014		4822 126 12785	47NF Y5VTUB 50V	QP12612785
2025		5322 124 21643	22UF 20% 40V	QQ12421643
2040		4822 126 10053	180PF 10% Y5P	QP12610053
2041		4822 126 10053	180PF 10% Y5P	QP12610053
2042		4822 126 12787	330PF 10% Y5V 50V	QP12612787
2043		4822 122 33848	47PF 5%SL 50V	QP12233848
2044		4822 122 33848	47PF 5%SL 50V	QP12233848
2045		4822 122 33195	100PF 10% 50V	QP12233195
2046		4822 126 12573	18PF 5% 50V	QP12612573
2047		5322 124 21643	22UF 20% 40V	QQ12421643
2048		4822 126 12787	330PF 10% Y5V 50V	QP12612787
2049		4822 126 10053	180PF 10% Y5P	QP12610053
2050		4822 122 10466	220PF 10% 50V	QP12210466
2051		4822 126 11585	22NF +80-20% Y5V 25V	QP12611585
2052		5322 124 21643	22UF 20% 40V	QQ12421643
2060		4822 126 12882	100NF +80-20% 50V	QP12612882
2062		4822 126 12882	100NF +80-20% 50V	QP12612882
2063		5322 121 42489	33NF 5% 250V	QQ12142489
2064		4822 126 12882	100NF +80-20% 50V	QP12612882
2066		4822 126 12339	2.2NF 10% Y5R	QP12612339
2067		4822 126 12882	100NF +80-20% 50V	QP12612882
2068		4822 126 12148	2.7NF 10%	QP12612148
2069		4822 126 10053	180PF 10% Y5P	QP12610053
2071		4822 126 12882	100NF +80-20% 50V	QP12612882
2072		4822 126 12882	100NF +80-20% 50V	QP12612882
2074		4822 126 12882	100NF +80-20% 50V	QP12612882
2075		4822 126 13151	3.9NF 10% Y5R 16V	QP12613151
2076		4822 126 10053	180PF 10% Y5P	QP12610053
2100		4822 126 12339	2.2NF 10% Y5R	QP12612339
2101		4822 122 33848	47PF 5%SL 50V	QP12233848
2102		4822 126 11585	22NF +80-20% Y5V 25V	QP12611585
2103		5322 121 42386	100NF 5% 63V	QQ12142386
2105		4822 122 33195	100PF 10% 50V	QP12233195
2110		5322 124 21643	22UF 20% 40V	QQ12421643

POS. NO	VERS. COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (USA/JAPAN)
2111		4822 126 12882	100NF +80-20% 50V	QP12612882
2113		4822 122 33191	22PF 5% 50V	QP12233191
2115		4822 126 11585	22NF +80-20% Y5V 25V	QP12611585
2116		5322 124 21643	22UF 20% 40V	QQ12421643
2140		4822 126 12785	47NF Y5VTUB 50V	QP12612785
2141		4822 126 12882	100NF +80-20% 50V	QP12612882
2142		4822 122 33848	47PF 5%SL 50V	QP12233848
2280		4822 124 40433	47UF 20% 25V	QP12440433
2281		4822 126 12882	100NF +80-20% 50V	QP12612882
2300		4822 124 40433	47UF 20% 25V	QP12440433
2301		4822 124 40433	47UF 20% 25V	QP12440433
2302		4822 126 11585	22NF +80-20% Y5V 25V	QP12611585
2303		4822 124 40433	47UF 20% 25V	QP12440433
2304		4822 122 10466	220PF 10% 50V	QP12210466
2305		4822 122 33849	150PF 10%Y5P 50V	QP12233849
2306		4822 124 40246	4.7UF 20% 63V	QP12440246
2307		4822 122 10466	220PF 10% 50V	QP12210466
2308		4822 122 33849	150PF 10%Y5P 50V	QP12233849
2309		4822 124 40246	4.7UF 20% 63V	QP12440246
2310		4822 126 12882	100NF +80-20% 50V	QP12612882
2374		4822 126 12882	100NF +80-20% 50V	QP12612882
2400		5322 124 21643	22UF 20% 40V	QQ12421643
2401		4822 126 11585	22NF +80-20% Y5V 25V	QP12611585
2505		4822 122 33197	1NF 10% 50V	QP12233197
2506		4822 126 12882	100NF +80-20% 50V	QP12612882
2514		4822 122 33197	1NF 10% 50V	QP12233197
2533		4822 126 11585	22NF +80-20% Y5V 25V	QP12611585
2534		4822 126 11585	22NF +80-20% Y5V 25V	QP12611585
2535		4822 126 12882	100NF +80-20% 50V	QP12612882
2536		4822 124 80294	3300UF 20% 16V	QP12480294
2537		4822 126 11585	22NF +80-20% Y5V 25V	QP12611585
2538		4822 123 14025	2200UF 20% 16V	QP12314025
2539		4822 126 11585	22NF +80-20% Y5V 25V	QP12611585
2540		5322 124 22094	220UF 20% 50V	QQ12422094
2541		4822 126 12882	100NF +80-20% 50V	QP12612882
2542		4822 124 80556	100UF 20% 10V	QP12480556
2560		4822 124 40849	330UF 20% 16V	QP12440849
2600		4822 126 12882	100NF +80-20% 50V	QP12612882
2601		4822 126 11585	22NF +80-20% Y5V 25V	QP12611585
2602		4822 126 11585	22NF +80-20% Y5V 25V	QP12611585
2701		4822 126 11585	22NF +80-20% Y5V 25V	QP12611585
2703		4822 126 11585	22NF +80-20% Y5V 25V	QP12611585
			RESISTORS	
3000				
1		4822 116 83864	10K 5% 0.5W	QP11683864
3004				
3005		4822 116 83864	11K 5% 0.5W	QP11683864
3006		4822 050 11002	1K00 1% 0.4W	QP05011002
3007		4822 050 11002	1K00 1% 0.4W	QP05011002
3010		4822 116 52235	1M 5% 0.5W	QP11652235
3011		4822 116 83864	10K 5% 0.5W	QP11683864
3012		4822 116 52219	330E 5% 0.5W	QP11652219
3013		4822 050 11002	1K00 1% 0.4W	QP05011002
3014		4822 116 83864	10K 5% 0.5W	QP11683864
3015		4822 116 52219	330E 5% 0.5W	QP11652219
3020		4822 050 11002	1K00 1% 0.4W	QP05011002
3021		4822 116 83864	10K 5% 0.5W	QP11683864
⚠ 3022		4822 052 10478	4R70 5% 0.33W	QP05210478
3040		4822 116 52239	120K 5% 0.5W	QP11652239
3041		4822 116 52239	120K 5% 0.5W	QP11652239
3042		4822 116 52291	56K 5% 0.5W	QP11652291

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POS. NO	VERS. COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (USA/JAPAN)
3043		4822 050 11002	1K00 1% 0.4W	QP05011002
3044		4822 116 52222	390E 5% 0.5W	QP11652222
3045		4822 116 52175	100E 5% 0.5W	QP11652175
3046		4822 116 52249	1K8 5% 0.5W	QP11652249
3047		4822 116 52276	3K9 5% 0.5W	QP11652276
3048		4822 116 52175	100E 5% 0.5W	QP11652175
3049		4822 116 52249	1K8 5% 0.5W	QP11652249
3050		4822 116 52223	430E 5% 0.5W	QP11652223
3051		4822 116 52223	430E 5% 0.5W	QP11652223
3052		4822 050 11002	1K00 1% 0.4W	QP05011002
3053		4822 116 52267	30K 5% 0.5W	QP11652267
3054		4822 116 52272	330K 5% 0.5W	QP11652272
3055		4822 116 52175	100E 5% 0.5W	QP11652175
3056		4822 050 11002	1K00 1% 0.4W	QP05011002
3057		4822 116 83882	39K 5% 0.5W	QP11683882
3058		4822 116 52175	100E 5% 0.5W	QP11652175
3059		4822 116 83884	47K 5% 0.5W	QP11683884
3060		4822 116 83864	10K 5% 0.5W	QP11683864
⚠ 3062		4822 052 10229	22R00 5% 0.33W	QP05210229
3064		4822 116 83961	6K8 5%	QP11683961
3065		4822 050 27502	7K50 1% 0.6W	QP05027502
3066		4822 050 21503	15K00 1% 0.6W	QP05021503
3067		4822 116 52244	15K 5% 0.5W	QP11652244
⚠ 3068		4822 052 10229	22R00 5% 0.33W	QP05210229
3069		4822 116 83864	10K 5% 0.5W	QP11683864
3070		4822 116 52244	15K 5% 0.5W	QP11652244
3071		4822 116 83961	6K8 5%	QP11683961
3072		4822 116 83864	10K 5% 0.5W	QP11683864
3073		4822 116 52244	15K 5% 0.5W	QP11652244
⚠ 3074		4822 052 10229	22R00 5% 0.33W	QP05210229
3075		4822 116 83864	10K 5% 0.5W	QP11683864
3076		4822 116 52283	4K7 5% 0.5W	QP11652283
3077		4822 116 83961	6K8 5%	QP11683961
3078		4822 116 52244	15K 5% 0.5W	QP11652244
3079		4822 116 52244	15K 5% 0.5W	QP11652244
3100		4822 116 52256	2K2 5% 0.5W	QP11652256
3101		4822 116 52257	22K 5% 0.5W	QP11652257
3107		4822 116 52219	330E 5% 0.5W	QP11652219
3108				
1		4822 116 83872	220R 5% 0.5W	QP11683872
3111				
⚠ 3113		4822 052 10338	3R30 5% 0.33W	QP05210338
3114		4822 116 52235	1M 5% 0.5W	QP11652235
⚠ 3115		4822 052 10338	3R30 5% 0.33W	QP05210338
3117		4822 116 52289	5K6 5% 0.5W	QP11652289
3140		4822 116 52271	33K 5% 0.5W	QP11652271
3141		4822 116 52271	33K 5% 0.5W	QP11652271
3142		4822 116 52271	33K 5% 0.5W	QP11652271
3143		4822 116 52234	100K 5% 0.5W	QP11652234
3144		4822 116 52234	100K 5% 0.5W	QP11652234
⚠ 3145		4822 052 10229	22R00 5% 0.33W	QP05210229
3146		4822 116 52175	100E 5% 0.5W	QP11652175
3147		4822 116 52283	4K7 5% 0.5W	QP11652283
⚠ 3280		4822 052 10338	3R30 5% 0.33W	QP05210338
3300		4822 116 52251	18K 5% 0.5W	QP11652251
3301		4822 116 52244	15K 5% 0.5W	QP11652244
⚠ 3302		4822 052 10108	1R00 5% 0.33W	QP05210108
⚠ 3303		4822 052 10108	1R00 5% 0.33W	QP05210108
3304		4822 116 52276	3K9 5% 0.5W	QP11652276
3305		4822 116 52276	3K9 5% 0.5W	QP11652276
3306		4822 116 52257	22K 5% 0.5W	QP11652257
3307		4822 116 52257	22K 5% 0.5W	QP11652257
3360		4822 050 11002	1K00 1% 0.4W	QP05011002

POS. NO	VERS. COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (USA/JAPAN)
3361		4822 116 52256	2K2 5% 0.5W	QP11652256
3362		4822 116 52256	2K2 5% 0.5W	QP11652256
3363		4822 050 11002	1K00 1% 0.4W	QP05011002
3368		4822 116 83874	220K 5% 0.5W	QP11683874
3369		4822 116 83874	220K 5% 0.5W	QP11683874
3370		4822 116 83884	47K 5% 0.5W	QP11683884
3371		4822 116 83884	47K 5% 0.5W	QP11683884
3400		4822 116 83884	47K 5% 0.5W	QP11683884
3401				
1		4822 116 52257	22K 5% 0.5W	QP11652257
3404				
3408		4822 116 52269	3K3 5% 0.5W	QP11652269
3409		4822 116 52257	22K 5% 0.5W	QP11652257
3410		4822 116 52257	22K 5% 0.5W	QP11652257
3411		4822 116 83874	220K 5% 0.5W	QP11683874
3500		4822 116 83868	150R 5% 0.5W	QP11683868
3501		4822 050 11002	1K00 1% 0.4W	QP05011002
3502		4822 116 52257	22K 5% 0.5W	QP11652257
3503		4822 116 52257	22K 5% 0.5W	QP11652257
3540		4822 116 83884	47K 5% 0.5W	QP11683884
3541		4822 116 52231	820E 5% 0.5W	QP11652231
3542		4822 116 52263	2K7 5% 0.5W	QP11652263
3543		4822 116 52283	4K7 5% 0.5W	QP11652283
3544		4822 116 52257	22K 5% 0.5W	QP11652257
⚠ 3545		4822 052 10478	4R70 5% 0.33W	QP05210478
3560		4822 050 11002	1K00 1% 0.4W	QP05011002
3562		4822 116 52283	4K7 5% 0.5W	QP11652283
3563		4822 116 52283	4K7 5% 0.5W	QP11652283
3601		4822 116 52238	12K 5% 0.5W	QP11652238
3602		4822 116 52238	12K 5% 0.5W	QP11652238
⚠ 3603		4822 052 10229	22R00 5% 0.33W	QP05210229
3604		4822 116 52303	8K2 5% 0.5W	QP11652303
3606		4822 116 52238	12K 5% 0.5W	QP11652238
3607		4822 116 52238	12K 5% 0.5W	QP11652238
3700		4822 116 83874	220K 5% 0.5W	QP11683874
3701		4822 116 52257	22K 5% 0.5W	QP11652257
3703		4822 116 52257	22K 5% 0.5W	QP11652257
3706		4822 116 52257	22K 5% 0.5W	QP11652257
3709		4822 116 52257	22K 5% 0.5W	QP11652257
3710		4822 116 52257	22K 5% 0.5W	QP11652257
3712		4822 116 52257	22K 5% 0.5W	QP11652257
3713		4822 116 52257	22K 5% 0.5W	QP11652257
3715		4822 116 83864	10K 5% 0.5W	QP11683864
3716				
1		4822 050 11002	1K00 1% 0.4W	QP05011002
3720				
3723		4822 116 52257	22K 5% 0.5W	QP11652257
3725		4822 050 11002	1K00 1% 0.4W	QP05011002
3726		4822 050 11002	1K00 1% 0.4W	QP05011002
3727		4822 050 11002	1K00 1% 0.4W	QP05011002
			COILS	
5010		4822 157 62552	2.2UH	QP15762552
5300		4822 157 71086	4.7UH	QP15771086
5301		4822 157 71086	4.7UH	QP15771086
			DIODES	
6360		4822 130 30621	1N4148	QP13030621
6361		4822 130 30621	1N4148	QP13030621
6400		4822 130 30613	BAW62	QP13030613
6401		4822 130 30613	BAW62	QP13030613

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POS. NO	VERS. COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (USA/JAPAN)
6402		4822 130 30613	BAW62	QP13030613
6500		4822 130 31981	BZX79-B3V9	QP13031981
6535				
I		5322 130 30684	1N4002RL	QQ13030684
6538				
6540		4822 130 83362	1N4004GP	QP13083362
6541		4822 130 34278	BZX79-B6V8	QP13034278
6542		4822 130 30621	1N4148	QP13030621
6543		5322 130 30684	1N4002RL	QQ13030684
6544		4822 130 30621	1N4148	QP13030621
6560		5322 130 30684	1N4002RL	QQ13030684
6561		5322 130 30684	1N4002RL	QQ13030684
6562		4822 130 31981	BZX79-B3V9	QP13031981
			TRANSISTORS & IC'S	
7000		4822 209 31064	TDA1301T/N2	QP20931064
7040		4822 130 40902	BF240	QP13040902
7041		4822 130 40959	BC547B	QP13040959
7042		4822 130 44568	BC557B	QP13044568
7043		4822 130 40959	BC547B	QP13040959
7044		4822 130 40959	BC547B	QP13040959
7060		4822 209 72587	TCA0372DP2	QP20972587
7061		4822 209 72587	TCA0372DP2	QP20972587
7100		4822 209 33339	SAA7345GP/S5	QP20933339
7280		4822 209 33164	TDA1545AT/N2	QP20933164
7300		4822 209 83274	NJM4560D	QP20983274
7360		4822 130 44121	BC338	QP13044121
7361		4822 130 44121	BC338	QP13044121
7364		4822 130 44568	BC557B	QP13044568
7365		4822 130 44568	BC557B	QP13044568
7400		4822 209 30249	TMP47C212AN-3312	QP20930249
7500		4822 130 44568	BC557B	QP13044568
7535		4822 209 80817	L7805CV	QP20980817
7540		5322 209 62115	MC79L15ACP	QQ20962115
7541		4822 130 40959	BC547B	QP13040959
7542		4822 130 44121	BC338	QP13044121
7543		4822 130 44568	BC557B	QP13044568
7600		4822 209 72587	TCA0372DP2	QP20972587
7650		4822 130 44568	BC557B	QP13044568
7700		4822 209 33249	MC68HC11ER20/P159.08	QP20933249
			MAINS VOLTAGE	
⚠ 5500	/01	4822 146 21796	MAINS TRANS.	QP14621796
⚠ 5500	/02	4822 146 31337	MAINS TRANS.	QP14631337
⚠ 5500	/05	4822 146 31339	MAINS TRANS.	QP14631339